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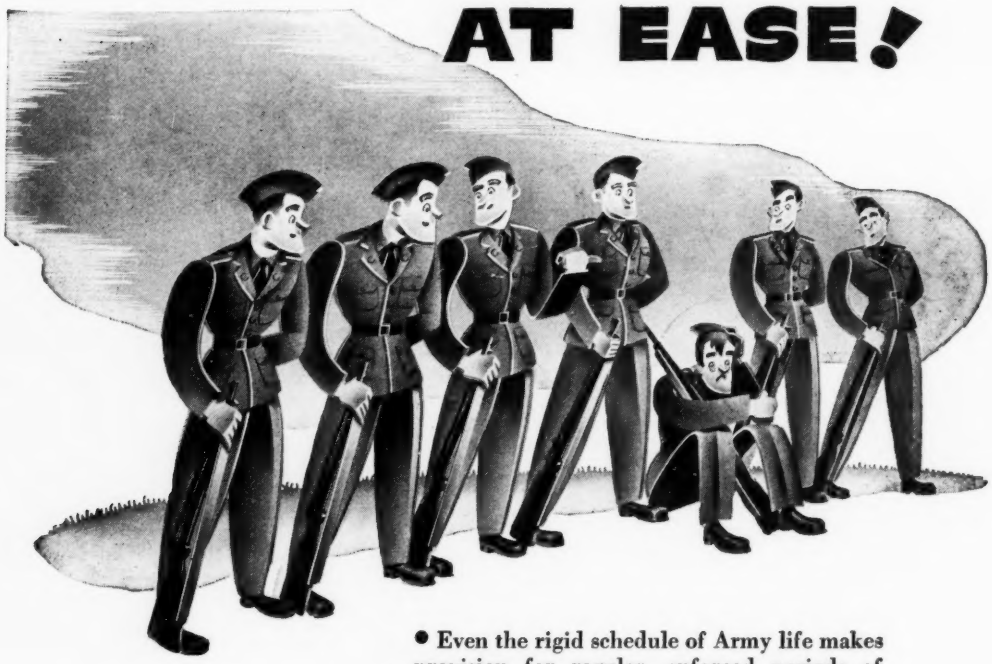

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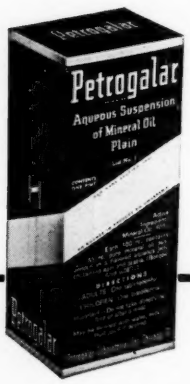

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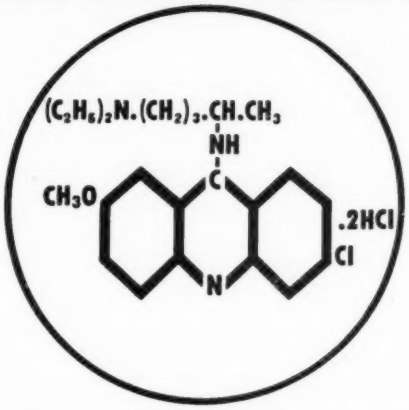

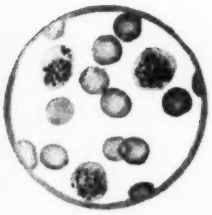

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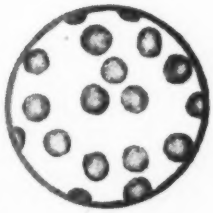

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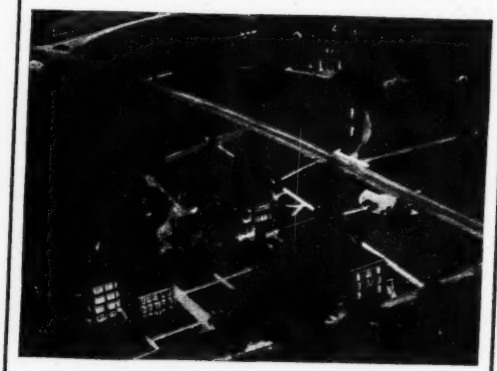

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A DERMATOLOGIST IN THE NAVY

LAUREN M. SOMPAYRAC
LIEUTENANT M.C.V-(S) USNR
JACKSONVILLE

Scientific dermatology began on Nov. 27, 1801, when the old Hospital Saint Louis in Paris was officially dedicated to the treatment of cutaneous diseases. American dermatology may be said to have begun in New York on June 22, 1836, when the Broome Street Infirmary for Diseases of the Skin was opened under the direction of Henry Dagett Bulkley.

No longer a specialty of descriptive words with a confused superficiality, dermatology has become cutaneous medicine founded on a firm scientific basis. Fortunately, this specialty has had great leaders who have commanded the respect of the entire medical world. This branch of medicine has been given professorships in practically all of the medical colleges. It has an independent department, often the largest from the point of view of floor space and attendance, in the leading hospitals. There are a number of hospitals completely self contained in all allied branches devoted entirely to dermatology.

The United States Navy also has come to recognize dermatology as a field of medicine that can be used to advantage. Since the opening of the Jacksonville Naval Hospital in July, 1941, this specialty has enjoyed an active service there. Located on the banks of the beautiful St. Johns River, this hospital renders service to the Naval Air Station and other naval activities.

The cooperation of the medical personnel with the dermatologist has been most gratifying. All have shown a willingness to release the cases requiring his services. No regular skin clinic is held. The hospital maintains, however, a full time outpatient department through which, when it is deemed necessary, cases are referred to the dermatologist. Records show that for the first quarter of the fiscal year there was an average of 67 patients a month who were referred through this channel. This number has steadily increased with the rapid growth of the station.

The admissions to the dermatology service for the first eight months of the hospital's existence were over 13 per cent of the total admissions. These cases included all of the common skin diseases in stages rendering the service man temporarily unfit for duty.

Unusual cases have also been encountered. One of the most interesting was a case of bullous erythema multiforme involving all mucous membranes, in which the disease at its height rendered the patient toxic enough to bring up the dreaded thought of a possible acute pemphigus. In this case sulfonamides failed to be of value in treatment. The patient was given a diet high in calories, and recovery was satisfactory following treatment with arsenic and good nursing care. Although the cause of this eruption was not determined, two similar but milder eruptions were traceable to the yellow fever vaccine. Sulzberger, dermatologist of the Naval Hospital at Brooklyn Navy Yard, observed similar reactions to this product.

Much more of a problem are the common skin diseases, which account for the loss of many man hours. Of these, fungus infection leads the field, causing 30 per cent of the total dermatologic cases. Unfortunately, no practical method of prevention of this disease has yet been found. The Jacksonville Naval Station spends $70 a month on sodium hypochlorite and similar preventives and keeps one man constantly renewing the solution in the vats in all showers in the barracks and the pools. The men are encouraged to use these facilities, but in spite of this precaution the pathogenic fungi enjoy a widespread existence on our naval forces.

Not only are preventive measures inadequate, but treatment is likewise unsatisfactory. There has as yet been no quick cure for athlete's foot ("spic itch") despite the multitude of advertisements to the contrary. Most of the patients know about a so-called sure cure, and I regret to say that many doctors have their pet "quick remedies," too. Yet it is from the group of patients treated by these enthusiasts that most hospital cases arise. Almost all patients admitted to the ward are overtreated. Or, perhaps the treatment is just not compatible with a duty status. At any rate, it is hoped that constant pleading for milder medication and encouragement in the use of talcum powder daily may lower the number of days lost because of this condition.

Despite the traditional cleanliness in the Navy, the animal parasites account for considerable

Read before the Sixty-Ninth Annual Meeting of the Florida Medical Association, held in Hollywood, Apr. 13, 14 and 15, 1942.

loss of time. The annual report of the Surgeon General of the United States Navy for 1939 showed that the common itch mite accounted for 4,729 sick days. No epidemics have occurred but there has been a little over one case for each week the Jacksonville Naval Hospital has been in operation. Early isolation and thoroughness of treatment are important here as well as in other parasitic infestations. A mild epidemic of rubella has recently taxed the isolation facilities of the hospital.

Impetigo contagiosa and staphylococcus infections of the skin have accounted for a good portion of the sick days in the hospital. The sulfonamides have been more helpful in impetigo contagiosa than in other diseases of this group. They have proved especially disappointing when administered both locally and internally in the treatment of sycosis vulgaris. Patients with carbuncles are given roentgen therapy and sulfonamides on admission with excellent results. Radical surgery has not been necessary.

Even acne vulgaris has caused such abscesses that hospitalization was deemed advisable. A diet low in fats and thyroid therapy, frequently helpful in mild cases, do not seem to be of value in the far advanced cases. Local treatment including ultraviolet and roentgen therapy, was often resorted to in order to hasten the patient's return to duty. No attempt is made to run a a beauty clinic, nor do the men wish to take time out for any nonessential attention. It has been of interest to note the similarity of some of the cases of acne to the lack of response of the metabolic rate in schizophrenics following the administration of thyroid. It is only an observation made in too few cases to warrant the drawing of a definite conclusion. The psychiatric department has become interested in this also.

Industrial dermatitis is a problem arising out of the main station. It is fortunate indeed that Dr. Hubert Coleman, the industrial physician, has been assigned to this area. On numerous occasions we have had opportunities to exchange ideas as to diagnosis, treatment and prevention of some of the occupational dermatoses encountered. Most of the cases have arisen from the assembly and repair department. This department embraces all of the various functions and includes all the hazards incident to the construction, repair and upkeep of aviation. Under one huge roof men are engaged in cleaning, repairing and rebuilding planes. At the vats where men are cleaning motors, using solvents containing chlorinated hydrocarbons, creosote and kerosene, cases of dermatitis are observed that vary from almost imperceptible erythemas to full blown weeping eczematous dermatitides. The only men who seem to be able to withstand the irritation are the dark-skinned negroes. Mulattoes and whites must give up the work, or be transferred to other phases of the cleaning after a few days. Most of the trouble arises where the machinery is cleaned in vats with hand brushes. Rubber gloves have been tried without success. Cleansing with soap and water before and after work followed by an application of lanolin and castor oil may prove of value, although sufficient time has not elapsed to evaluate this procedure. Some of the parts of the planes are cleaned by trichlorethylene vapor, which is kept low in the vats by a cooling system. Here only an occasional irritation is encountered in the operators. Adjustment of ventilation has greatly reduced primary skin irritations due to vapors. Some problems of skin irritation arise in the painting or doping department. A vanishing cream used before and after work has done much to control this trouble.

In the hospital physiotherapy and superficial roentgen therapy have been delegated to the dermatologist. This arrangement has worked out satisfactorily. Infra-red lamps, diathermy and hydrotherapy units of the finest type are included in this section. Many benign and malignant growths have been removed with the electrosurgical unit in this department. The pathologist works in close harmony with the staff of this department, observing growths before removal and giving full and prompt reports on biopsies.

Working full time in the hospital affords excellent opportunity for consultation in all fields. The department of urology takes care of the syphilitic cases, but frequently the dermatologist is consulted.

Besides taking care of the officers and enlisted men, the Naval Hospital carries on an outpatient department, which cares for the families of the naval personnel. Here, pediatricians, obstetricians and gynecologists find their niche in the plan of the hospital.

Another function of the hospital is to examine applicants for appointments and survey out those who are unfit for duty. Every doctor finds these examinations a part of his work.

Although each specialist is recognized for his knowledge, he is nevertheless considered first

of all a physician. Being located on a medical ward, it is part of my work to help with the general medical cases.

The duty of serving as officer of the day occurs every five to ten days, and two physicians are placed in charge of the hospital. On these days the physician is taken back to his intern days. A patient with acute appendicitis may and has come in at night. A case of fracture, even an obstetric case may need his attention. Help is on call if needed, but each medical officer is encouraged to reacquaint himself with the common procedures in order to be ready for duty whenever he may be needed on land or sea.

Under able and progressive leadership the break from private practice has become less hard and with the added stimulus of Pearl Harbor, one finds work that can be pleasant and interesting. Above all there is a great sense of satisfaction in knowing that the dermatologist, as well as every qualified practitioner of medicine, can do his part in carrying out the mission of the medical department of the Navy, which is to "keep as many men at as many guns as many days as possible."

Jacksonville Naval Hospital.

DISCUSSION

DR. H. W. COLEMAN, Jacksonville: The members of the Association are disappointed, I am sure, that his duties are such that Dr. Sompayrac was unable to be here to give his paper, and I know he appreciates the kindness of Dr. Wilson in making such an excellent presentation for him.

Industrial medicine is a new branch of medicine at the Naval Air Station in Jacksonville. Most of the activities are confined to the large assembly and repair shop. There over half of the industrial cases are cases of dermatitis. It is for these cases that I have to call on Dr. Sompayrac over at the Naval Hospital.

Most of the cases of dermatitis come from the shop where the motors are disassembled and the parts cleaned. After an airplane motor has been run for from five hundred to seven hundred hours, it is overhauled whether it needs it or not. The number of motors to be overhauled may be estimated by the vast number of planes over Jacksonville each day. This number is increasing, I am glad to say.

At one end of the disassembly shop is a group of mechanics tearing down the motors. The small parts are put in a vat containing a creosol-chlorinated hydrocarbon solution in which they are cleaned by hand. They are rinsed in kerosene. As pointed out by Dr. Sompayrac, negroes are used for this work because of the natural resistance of their skin. The large motor parts are boiled in a nearby vat containing creosol so as to remove the grease and paint. The final step in the cleaning is done by immersing the parts in trichlorethylene fumes.

It was easy to understand the primary contact dermatitis which developed in the negroes working with their hands in the cleaning solution, and the oil folliculitis which developed in the mechanics who wore soiled, oily clothing, but for a while Dr. Sompayrac and I were at a loss to explain the eczematoid dermatitis developing in the workmen in the extreme end of the shop and involving their arms, neck and face, all exposed parts. We soon learned that it could be controlled by painting the skin with compound tincture of benzoin, or by covering the arms with sleeves. It then became obvious to us that the dermatitis was caused by the contact of the fumes, a combination of trichlorethylene, kerosene and creosol, with the skin. This was remedied by exhaust ventilation carrying off the fumes.

We have also seen some allergic dermatitis. This form of the disease would subside when the patient left the job and would promptly recur on his return. In cases of this type the patch test with the suspected chemical in olive oil was used, and I served as a control. These cases were remedied by removing the patient whose reaction was positive from the offending substance.

I want to take this occasion to thank Dr. Sompayrac for his services as dermatologist, for they are essential to the department of industrial medicine.

DR. WILEY M. SAMS, Miami: I am glad to have the opportunity of discussing Dr. Sompayrac's paper and, in a sense, of speaking for the dermatologists of the state of Florida.

There are approximately 16 physicians limiting their work to dermatology in Florida. Four of them are in the service, 2 in the Army and 2 in the Navy. It is gratifying to hear that their special knowledge and training are being utilized, and this change in attitude on the part of the service is, I think, most desirable.

There is a distinct possibility that a large number of physicians of the state who are under 45 years of age will, in some measure, contribute their efforts in some organization before the end of the war. Those of us who have had some particular training, or have some special aptitude, naturally hope that we will be able to contribute our share in that branch of medicine in which we feel we are most efficient. If some way of distributing physicians can be worked out, I believe we can contribute a greater part toward the war effort.

For some time I have realized the problem involved in developing specialists in either the Army or the Navy, and so far but little effort has been spent in that direction. I do not know how many are familiar with the usual routine in the Navy, but those entering are usually given a rating of Lieutenant (j. g.), and if they have not had an internship, they are assigned to a hospital for one year's service. After this they are usually assigned for sea duty for one or more years and then are sent back to a hospital, or to foreign shore service. Perhaps when they reach the age of 40 or so, when most men feel that they have learned enough on a particular subject to be a qualified specialist, they are assigned as the head of a department in one of the Naval hospitals, where for a few years they have an opportunity to practice medicine in a group, and at that time they may be head of some department in which they have acquired special knowledge. When he finishes this tour of duty, or when he is selected for higher rank, the medical officer is usually shifted to administrative work, and for this reason the service seldom develops older men who have acquired long experience in any particular line. The frequent change of location and the shifting from one post to another and one type of work to another develops men who are well grounded in the type of work which the Navy requires, but do not afford opportunity for limited specialization. This observation is not offered as criticism, but merely as the policy of the Navy, for this plan best suits its particular need.

It is gratifying to hear that syphilis is now a rare disease in the Navy. If such is the case throughout the service, it can be attributed to preventive medicine. It will require much careful work to maintain such a record, now that the organization is distributed over a world wide front.

DR. J. F. WILSON, Jacksonville (concluding): Although I was in the Navy during the last war, I do not feel qualified to discuss Dr. Sompayrac's paper. At that time there were no specialties recognized except eye, ear,

nose and throat, roentgenology and possibly laboratory work. All the junior officers did work identical with that of interns in civilian hospitals.

It seems to me the system wastes talent by using specialists as general practitioners. I know of a surgeon who is doing chest work, an eye, nose and throat specialist on recruiting duty and a psychiatrist doing general practice.

It seems to me if the men were used for work in which they are specially qualified that it would result in better work all around and fewer hospital days for the men in the service.

THE SPLENOMEGALIES WITH SURGICAL INDICATIONS

J. W. SNYDER, M.D.
MIAMI

The spleen is an organ whose functions have long been veiled in uncertainty and almost in mystery. Its removal, even when it is normal, seems to have no adverse effect on the general well-being of the patient. When it is grossly enlarged, the symptoms produced are largely the effect of size and displacement of other abdominal structures. Enlargement in the presence of certain infections would seem to give it a place in the development of immunity. It may also act as a filter removing bacteria and other harmful materials from the circulation. It is concerned with the destruction of erythrocytes and the storage of iron. It produces lymphocytes and may also produce various hormones which have to do with the production of red cells by the bone marrow, with the tone of the gastrointestinal musculature, with the coagulation of the blood and with various other functions still in the realm of probability. In diseases such as purpura hemorrhagica and familial icterus its role is definite, and arrest or cure uniformly follows its removal.

To the pathologist the spleen is a disappointing organ. In only a few diseases are the changes characteristic. Primarily he observes hyperplasia or atrophy, congestion or anemia and metaplasia or fibrosis. Such changes occurring singly or in various combinations constitute the usual syndrome and are of themselves rarely diagnostic. He, therefore, endeavors to correlate his observations with the blood picture and other manifestations of the disease process in order to arrive at a definite diagnosis.

Not many years ago, splenomegaly was readily differentiated into three or four simple types comprising mainly the leukemias, Banti's disease and the malarial spleen. Today so many different types of splenic enlargement are recognized that accurate diagnosis is often a matter of group effort. In taking up the various splenomegalies an effort will be made to present the several types briefly and to give only the major characteristics, thus avoiding extensive discussion as much as possible.

Read before the Fourth Annual Meeting of the Northeast Medical District, Daytona Beach, October 3, 1940.

MOBILE SPLEEN

The wandering or mobile spleen is commonly enlarged because of vascular stasis. It may be found at any point in the abdomen and even low in the pelvis. Gangrene from acute strangulation of its blood supply is a common occurrence. Pressure or traction on adjacent organs may give rise to a variety of symptoms, the usual syndrome suggesting intestinal obstruction, or a strangulated ovarian cyst. By reason of the long pedicle splenectomy is particularly easy and is usually carried out when the organ is encountered unexpectedly. Fixation of the spleen to its normal position (splenopexy) is not advised.

ABSCESS

Abscess of the spleen is of infrequent occurrence and is usually a postmortem finding. It may arise from an infected hematoma or infarct and as a metastatic abscess. The diagnosis is difficult because the nature of the disease is obscure, presenting the characteristic features of a septic process until perisplenitis produces localized pain and tenderness. Rarely a splenic friction rub can be heard. Pain may radiate to the left shoulder because of diaphragmatic irritation. With timely intervention and drainage of the abscess or, if possible, splenectomy the condition changes from a hopeless state to one of much promise. A considerable number of successful cases of splenectomy for splenic abscess have been reported.

TUBERCULOSIS

In a similar manner tuberculosis of the spleen occurs usually as part of a generalized invasion. If such involvement constitutes the major part of the syndrome, splenectomy is indicated. A few cases of apparent primary tuberculosis of the spleen have been reported. Bunch reported a case of this type which simulated Banti's disease. Winternitz reviewed the subject of primary tuberculosis of the spleen and reported 51 cases.

SYPHILIS

The spleen is involved in all stages of syphilis except the primary. In congenital cases this or-

gan may be enormous in size, and the clinical picture is that of splenic anemia or von Jaksch's anemia, varying somewhat with the age of the patient. The spleen shows a diffuse fibrosis and thickening of the arterial walls. Progress of the condition results in Banti's syndrome if the patient is not properly treated. In acquired syphilis the splenic enlargement in the tertiary stage is usually associated with syphilitic hepatitis and cirrhosis of the liver, commonly called hepar lobatum. I well recall such an instance in which antisyphilitic treatment failed to improve the condition and in which splenectomy was attempted. The collateral circulation encountered was so massive, not only in the abdominal wall but in all structures about the liver and spleen, that the attempt was abandoned. In more favorable cases splenectomy is of distinct benefit, and following this procedure antisyphilitic treatment may be much more effective.

MALARIA

Enlargement of the spleen is a clinical feature of chronic malaria. Since distribution of the parasites is systemic and the spleen does not serve as an incubator, splenectomy is rarely indicated. It is employed on occasion because of the massive size of the organ and symptoms of mechanical origin resulting from pressure and weight.

HODGKIN'S DISEASE

Splenic enlargement may occur early or late in the course of Hodgkin's disease. In a few cases splenomegaly has been the only clinical evidence of the disease. The pathologic changes in the spleen and lymph glands are as a rule readily diagnostic. Early predominance of eosinophils is followed by the presence of Dorothy Reed giant cells and fibrosis of the glandular structure. Splenectomy would be indicated in primary splenic Hodgkin's disease if diagnosis were possible, but no such instance has been reported.

LEISHMANIA

There are three diseases caused by different varieties of a protozoan parasite belonging to the genus Leishmania. They are all conveyed to man, although perhaps not exclusively, by different sandflies. Two are largely local diseases, namely, oriental sore and espundia; the latter is sometimes termed American or Brazilian leishmaniasis. The three varieties of Leishman protozoa closely resemble each other. On culture mediums and in the vectors they are flagellated and have a fusiform shape, while in man they lose their flagella and are chiefly found within endothelial and mononuclear cells.

Kala-azar is a general systemic infection associated with a massive splenomegaly, mainly restricted to India and China. The protozoa are found in the endothelial cells of the internal organs, particularly in the reticuloendothelial system of the spleen, liver, lymph glands and bone marrow, as well as in the circulating blood. The disease develops with a regular or irregular pyrexia, together with anemia, leukopenia, diarrhea, emaciation, edema and great enlargement of the liver and spleen. Complications arise due to secondary infections and a hemorrhagic tendency. Diagnosis depends on the demonstration of the parasite either in the peripheral blood or in the spleen, liver or gland pulp obtained by puncture. The Leishman-Donovan bodies are characteristically found in the reticuloendothelial cells, and their presence confirms the diagnosis.

Treatment rests upon the use of antimony in some form. If the patient improves under such treatment, together with blood transfusions and general hygienic measures, and the spleen still remains unchanged, splenectomy may be considered.

SCHISTOSOMIASIS

Schistosomiasis is endemic in Porto Rico and Venezuela. It reproduces Banti's syndrome in every detail. The cause is a blood fluke which resides in the vascular plexuses of the mesentery and the portal system. The discharge of eggs into the intestinal capillaries produces an intense local reaction of the intestinal wall with diarrhea and bloody mucoid stools. Diagnosis depends upon the identification of the ova in the feces. Following deposition of the eggs in the liver a pseudotubercle or fibrous nodule is formed. If the infestation is sufficiently heavy, a severe form of cirrhosis results with splenomegaly and ascites resulting in a syndrome similar to that of Banti in all particulars. Antimony given intravenously is a satisfactory remedy if employed early. In the late stages of the disease treatment is of little avail. There are few data relative to splenectomy in this condition, although it would seem to be definitely indicated in certain cases. Rousselot reported 2 cases presenting a late visceral form of schistosomiasis in which splenectomy was performed with excellent results.

PORTAL CIRRHOSIS

Cirrhosis of the liver is a chronic disease inevitably fatal. The commonly accepted etiologic factors, such as alcohol and spices, can be removed, and by dietary management life may be prolonged. Recent investigation also suggests that vitamin deficiency may be an important factor. Under normal conditions it has been estimated that the spleen furnishes from 15 to 20 per cent of the blood brought to the liver by the portal vein. With the spleen increased to several times its normal size this percentage is likewise increased. Removal of the spleen reduces the portal circulation by that amount and so decreases the load and demands upon the liver. The results of splenectomy are far from brilliant, but it is probable that in cirrhosis this procedure is the last resort while in splenic anemia it is the first.

Gastric hemorrhage is a common complication of portal cirrhosis. Varices form in the stomach and lower part of the esophagus, probably as part of a collateral circulation. Hemorrhages from such varices can be violent and frequently they terminate the life of the patient. This feature is common not only to portal cirrhosis, but to many types of splenomegaly, particularly those observed in splenic anemia or Banti's disease, and in thrombosis of the splenic vein. This similarity leads to the suspicion that they may all have a common etiology, with only minor variations in the clinical course.

SPLENIC ANEMIA

Although the term splenic anemia was first employed by Gretzel in 1866, it was Banti in 1883 who stimulated interest in the condition. In a monograph he discussed splenomegaly with cirrhosis of the liver and ascites, and to this syndrome his name is still applied. In 1898 he further characterized the disease as one of progressive splenic enlargement with anemia and leukopenia, progressing on to obvious cirrhosis of the liver with jaundice and ascites. He believed that the spleen itself elaborates a toxic substance which causes degenerative changes in the veins as well as cirrhosis of the liver. Since that time, although various types of splenomegaly have been separated from this group, it still remains the major division of splenomegalies. The exact etiology is unknown. Two theories prevail. One is that the major cause is increased portal venous pressure due possibly to early changes in the liver or to venous obstruction caused by thrombosis, with the spleen enlarging in a more or less passive manner. The second theory presupposes a primary change in the spleen with portal cirrhosis following as a secondary development.

In support of the first theory Rousselot reported a portal hypertension of from three to five times normal in all cases tested and mechanical venous obstruction in 70 per cent of all cases examined. He further observed that by injecting salicylate particles into the portal circulation of the dog at intervals he was able to reproduce Banti's syndrome in all particulars.

By contrast, the clinical picture of splenic anemia often presents well developed splenomegaly before hepatitis is evident. Furthermore, the disease tends to occur in youth, a period of life usually free of cirrhosis, and lastly, the clinical features change so abruptly in favorable cases that a noxious factor seems to be eliminated with removal of the spleen.

The spleen itself shows capsular thickening, a dry beefy cut surface and reticular and trabecular fibrosis. Splenectomy in this condition results in a relatively high mortality. The operation is difficult by reason of perisplenic adhesions and collateral vessels. The operative mortality varies from 7 to 10 per cent. Contributing to this mortality are recurrent hematemesis and a tendency to vascular thrombosis. About one half of the patients are permanently cured, and the remainder may live for many years. Recurrence of gastric hemorrhage is their greatest danger. The following case illustrates some of the difficulties encountered in treating splenic anemia.

Phillip, aged 22, was first seen in March 1939. He had noted a mass in the upper portion of the abdomen on the left side for three or four years. One year previously he had become jaundiced and at that time hematemesis had first occurred. Hemorrhages had occurred three times since then. For four years he had experienced gastrointestinal upsets characterized by nausea and vomiting. Physical examination disclosed a very large spleen, and anemia was present. Examination of the blood showed an erythrocyte count of 2,555,000 and a leukocyte count of 2,300 with a hemoglobin estimation of 42 per cent; the blood platelet count was 60,000; the bleeding time was eight minutes; the coagulation time was three minutes; and the test for fragility gave normal results. The icteric index determination was 7, and the results of the Kahn test were negative.

The course of the disease while the patient was in the hospital was marked by many gastric hemorrhages. Repeated transfusions were used to build up the blood, which was again and again depleted by recurring hemorrhage. Finally he was brought to a reasonable state, and a splenectomy was performed. Adhesions were so dense between the spleen and the liver that separation by knife dissection was necessary. The surface of the liver was smooth, but the consistency was firm. A biopsy of the liver demonstrated newly formed connective tissue in the periportal fields, proliferating bile ducts,

and a mild inflammatory reaction, all rather typical of a periportal cirrhosis.

The spleen was greatly enlarged, measuring 24 cm. in length and 9 cm. in width. The consistency was firm, and the capsule was thickened. Microscopic examination showed rarification of the lymph follicles with a great increase in connective tissue; areas of hemorrhage and swollen endothelium lining the sinuses were also observed.

Convalescence, except for temperature postoperatively, was normal. There has been no further bleeding. The patient looks well and has gained in weight. The result certainly warranted surgical intervention.

COOLEY'S ANEMIA

Erythroblastic anemia, or Cooley's anemia, is a chronic disease of childhood, sometimes regarded as a stage of Banti's disease. Certain peculiarities, however, separate it definitely from the general classification of splenic anemia. It seems to affect only children of the Mediterranean races, particularly the Greek, Italian and Syrian. It is characterized by mongoloid facies, splenomegaly and the presence of large numbers of nucleated red cells in the circulating blood. The anemia is usually of severe grade, hypochromic in type and associated with definite leukocytosis. There is progressive enlargement of the abdomen because of the great degree of splenomegaly and a lesser degree of hepatomegalia. The skin is pale and slightly icteric. The peripheral lymph glands are enlarged, and a generalized skeletal change is visible on roentgen examination because of great hyperplasia of the bone marrow. This hyperplasia concerns mainly the erythroblastic elements and to a lesser degree the myeloid, so that the marrow resembles that seen in pernicious anemia. The spleen is greatly enlarged and shows extramedullary hematopoiesis of the erythroblastic type and a lesser myeloid response.

Following splenectomy there is a tremendous normoblastic response, but the essential blood picture remains unchanged. Thus, while splenectomy is of little curative value, it relieves the growing child of a massive tumor and may retard the progress of the disease. Diamond, by contrast, believed that splenectomy is definitely contraindicated because of the tremendous increase in circulating nucleated erythrocytes, which are no longer destroyed by the spleen. Severe anemia finally terminates the life of the child.

GAUCHER'S DISEASE

Gaucher's disease is a chronic familial disturbance of lipoid metabolism, in which there appear certain cells of specific morphology in the spleen, liver, lymph glands and bone marrow. They are produced by the excessive storage of a cerebroside (kerasin) in the cells of the reticuloendothelial system of these organs. Frequently the spleen is first and practically the only organ affected and it may reach tremendous size. The disease has an insidious course. Anemia and leukopenia develop with occasional hemorrhages. The skin shows a brownish pigmentation (hemochromatosis), and yellowish wedge-shaped elevations may be observed in the conjunctiva. Changes in the bone marrow can be recognized by roentgen examination.

The spleen on microscopic examination shows throughout the pulp and sinusoids, large pale round or spindle-shaped cells with small eccentric nuclei, sometimes termed foam cells, which are characteristic of the disease.

Splenectomy gives definite relief. Diamond reported 5 cases with excellent results in each. The disease may, however, progress persistently in other portions of the reticuloendothelial system.

NIEMANN-PICK DISEASE

A second disease of faulty lipoid metabolism closely resembles Gaucher's disease. It is called Niemann-Pick disease. Here, the reticuloendothelial system retains a phosphatide rather than a cerebroside as in Gaucher's disease. There is a pronounced splenomegaly developing in early infancy, associated with brownish pigmentation of the skin, malnutrition and retarded development. In the majority of cases it occurs in children of Jewish descent. As the disease is invariably fatal in early life, surgical therapy is of no avail.

CHRONIC HEMOLYTIC JAUNDICE

Chronic hemolytic jaundice, sometimes termed hemolytic splenomegaly or spherocytic anemia, is characterized by a fluctuating type of jaundice due to the increased fragility of the erythrocytes as shown by lysis in hypotonic salt solution. This tendency is attributed to their spherical form. Cells of this shape constitute from 10 to 25 per cent of the total number of erythrocytes according to Thompson, the remainder being reticulocytes or normal red cells. This author concluded that, as these spherical cells appear to be selectively removed from the circulation by the spleen, there is enough evidence to warrant the assumption that all the increased destruction of red blood cells in the active phase of the disease takes place within the spleen. Removal of the spleen promptly cures the jaundice, although the spherical form of erythrocytes persists in the general circulation for life.

There are supposed to be two types of the disease, one congenital and the other acquired. In the familial type all members of a family may not have an active form of the disease, for in some only the spherical erythrocytes are present without the jaundice. It occurs in both sexes and may be transmitted by either. The jaundice is never deep, and the urine does not contain bile; but bile is abundant in the stools, and the indirect van den Bergh test gives strongly positive results. If bile appears in the urine, it is evidence of some secondary obstructive type of jaundice due to bile thrombi in the bile canaliculi or a stone in the common duct. Gallstones are present in about two thirds of the chronic cases. The anemia varies from moderate to severe, with a reticulocyte response of 10 per cent or more, depending upon the severity of the anemia.

The course of the disease is interrupted by crises of increased hemolytic activity. This results in general malaise, abdominal pain, fever, deepening jaundice, increasing anemia and enlargement of the spleen. Early splenectomy for the infant or young child may, therefore, be indicated as a life-saving measure.

Splenectomy in a favorable case is particularly easy because of freedom from adhesions about the spleen, and the mortality is correspondingly low. Pemberton reported 4 fatal cases in a series of 135 cases in which the patient was subjected to splenectomy. Fortunately, permanent arrest or cure of the disease can be expected in all cases of true congenital hemolytic icterus. One complication which follows splenectomy is the building up of a high platelet level, with pain, fever, leukocytosis and sometimes convulsions as an evidence of intravascular thrombosis. Fortunately this difficulty usually subsides within a short period of time.

There follows the description of a case that is typical of the condition:

Roger, aged 13, was first seen in 1935. He had experienced recurring attacks of jaundice with nausea and vomiting for many years. At one time he had been sick one week out of four, but recently his attacks had occurred at intervals of from six to twelve months. Between attacks his health had been excellent.

His mother had had a splenectomy for a similar condition. One half-sister was similarly affected. A maternal uncle was apparently free from the disease, as were his children.

On physical examination the only abnormality noted was an enlarged spleen. The patient was not jaundiced appreciably, the icteric index determination being 3.5. Hemolysis of the red cells began at .5 and was complete at .38. The hemoglobin estimation was 70 per cent, and the erythrocyte count was 3,420,000. The van den Bergh test was reported as giving negative results.

Splenectomy was carried out with particular ease because of the absence of adhesions. The liver and gallbladder seemed normal. The patient's convalescence was uneventful. During the ensuing five years his health has been excellent, and from a stunted abnormal child he has developed into a youth well proportioned and normal in every respect. His only worry seems to be how he can join the navy with his medical background.

THROMBOCYTOPENIC PURPURA

Thrombocytopenic pupura is a clinical entity of unknown cause characterized by a hemorrhagic tendency, by a diminution of the platelets in the circulating blood, and by a spleen little if any enlarged. Since pupura is a symptom common to various infections, leukemias and anemias, and is produced by various drugs and toxins as well, a careful study of the clinical characteristics is essential. In differential diagnosis aspiration and study of the bone marrow to rule out other conditions are at times essential.

Purpura hemorrhagica is a disease of early life occurring in an acute and a chronic or remittent form. Study of the blood shows a low platelet count, 60,000 or less as a rule, prolonged bleeding time, normal coagulation time, absence of clot retraction, appearance of petechiae in the skin distal to a tourniquet blocking the venous return, and a spleen normal in size. Any case in which the spleen is easily palpated is more apt to belong to the symptomatic group of purpuric diseases. Pathologically the spleen, except for congestion, appears normal.

Peculiarly enough, splenectomy arrests the disease. Whipple observed that even clamping the pedicle preparatory to removing the spleen stops the general bleeding. Pemberton reported an operative mortality of 7 per cent in a group of 57 cases, with permanent remission in 63 per cent of the survivors and improvement in an additional 35 per cent.

POLYCYTHEMIA VERA

Polycythemia vera is a disease of unknown cause presenting a clinical syndrome of cyanosis, splenomegaly and polycythemia. It is characterized by an increased blood volume as well as an elevated erythrocyte concentration and a viscosity of from five to eight times normal. The erythrocyte count may be increased to 15,000,000 with an accompanying extensive hyperplasia of the red bone marrow. The spleen is both congested and hyperplastic, varying in size so that at times it may not be palpable.

Cerebral or intestinal thrombosis with hemorrhages, cirrhosis of the liver, or cardiac failure

tends to terminate the condition. In some cases periods of arrest or regression may prolong the disease over many years.

Roentgen therapy over the long bones to check the formation of the red cells, or some drug such as phenylhydrazine because of its hemolytic effect, tends to reduce the red cell content of the blood and to produce symptomatic relief. Splenectomy is generally considered unwise and useless, but remarkable results have been obtained in a few cases. For the present, splenectomy, although not considered standard treatment, is a matter of some interest.

LEUKEMIA

There are numerous varieties of leukemia, differentiated by the types of leukocytes appearing in the peripheral blood. The spleen may be of enormous size, as seen in the myelogenous type, or of moderate size as in the lymphatic variety.

The subject is largely medical and so extensive that it cannot be considered in this review. Surgical experience has shown that splenectomy can be safely performed after the spleen has been reduced in size by roentgen therapy, but in the final analysis the procedure of splenectomy does not benefit the patient suffering from leukemia.

SPLENIC TUMORS

Primary tumors of the spleen are rare. Angiomas, fibromas, chondromas, osteomas and lymphangiomas have been reported. The sarcoma group constitute the only type of malignant disease primary in the spleen. Most of these are met as postmortem curiosities although the treatment of primary splenic tumors should be by splenectomy, if the tumor produces clinical symptoms.

Cysts of the spleen, although also rare, comprise a group whose surgical management has met with particular success. The reported cases

Fig. 1. Cyst of the Spleen. The spleen is flattened out to form the anterior wall of the cyst. The fibrous walls of the cyst seen below the spleen are collapsed from rupture during surgical removal.

in the American literature now number 91, according to Sherwin, Brown and Liber. They are divided into the parasitic and nonparasitic varieties. The usual cyst is large and unilocular, the contents hemorrhagic, or sometimes clear.

The case described presented a therapeutic problem in that pregnancy coexisted with a large cyst of the spleen:

Mrs. O. entered the hospital on May 17, 1940, because of a mass in the upper portion of the abdomen on the left side. It had first been noted one year previously. There was no history of trauma. On examination, it was observed that the mass extended from the ribs on the left to the level of the umbilicus and across into the right side of the abdomen. The patient was four months pregnant, and the question presented was which condition should give way as there was not room in the abdomen for the spleen and a term pregnancy. In the past she had gone through a cesarean section for contracted pelvis. Her general condition was satisfactory. The hemoglobin estimation was 65 per cent, and the erythrocyte count was 4,170,000. The fragility of the red cells was normal, and there was a bleeding time of three minutes.

There was some discussion as to the feasibility of performing a therapeutic abortion before attempting to remove the spleen, but this measure was avoided, and on May 20 a splenectomy was performed. The spleen was rounded in contour with intimate adhesions between the cyst wall and the posterior abdominal wall. Fortunately, the adhesions were not vascular and after rupture of the cyst, the cyst walls were peeled from the posterior part of the abdomen without difficulty. The brownish exudate which escaped from the cyst was removed from the abdomen by lavage, and the operation was completed.

The patient was given a transfusion postoperatively after return to her room. The convalescence has been uneventful, and she is now awaiting delivery by a second cesarean section.

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DIABETES MELLITUS

AN ANALYSIS OF CASES OBSERVED IN THE OUTPATIENT DEPARTMENT OF THE DUVAL COUNTY HOSPITAL DURING THE LAST FIFTEEN YEARS

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Diabetes as a recognized disease entity appears to be age-old. About 50 A. D. Celsus, a Roman physician and writer, not only defined this disease but advised treatment and a diet. In the same century Areteus, a Greek physician, described it as "melting down the flesh and bones into urine" and named it diabetes, which, roughly translated from the Greek, means "to run through a siphon." Since then innumerable scientists have sought the cause of the disease, but it was not until 1899 that it was established when Minkowski and von Mering extirpated the whole pancreas of a dog and found the pancreatic gland to be the seat of diabetic disease. In 1869, however, Langerhans had discovered the division of the pancreas. Various experiments proved that the islands of Langerhans are ductless glands, secreting an antidiabetic hormone, for which Sir Sharpey Schafer in 1916 proposed the name insulin, meaning, island of the pancreas. In 1922 Banting and Best, using the pancreas of an unborn calf, finally extracted the product, and its commercialization followed.

In 1926, under the supervision of one of us (T. Z. C.), a special clinic for the treatment of diabetes mellitus was organized in the outpatient department of the Duval County Hospital. In 1934 there were 48 patients under observation, in 1939, 128, and during 1941, 160. No attempt is made here to discuss the history or specific treatment of these patients in any detail.

The patients currently under observation are divided as follows: white 86, of whom 26 are males and 60 females; colored 74, of whom 16 are males and 58 females, making a total of 42 males and 118 females. The average age in 1939 was 50.6 years with extremes of 17 and 79 years. At present the average age of the white patients is 47.6 years, and the extremes are 5 and 74 years. The average age of the colored patients is 46 years, the extremes being 18 and 75 years. A possible explanation of the lowering of the average age since 1939 lies in the transferring of all diabetic patients from the department of pediatrics to the diabetic clinic. Of the 160 patients under treatment, 22 control the condition by diet; 5 receive plain insulin, 126 protamine-zinc insulin and 7 a combination of plain and protamine insulin *(table 1)*. The largest amount of insulin being taken is 125 units (protamine-zinc insulin 50 units and plain insulin in three injections of 25 units each). One patient is allergic to protamine. The consensus in this clinic is that many of the patients now using insulin could do without the drug if they would adhere more closely to the diet prescribed. Patients of the type attending this clinic and even those of the more intelligent groups diet more carefully and report more regularly if they are required to take a small amount of insulin. Once off the insulin, they have a tendency to feel that they are cured.

TABLE 1. CASES OF DIABETES CONTROLLED BY DIET, BY INSULIN, OR BY BOTH.

78.6%	(126)	controlled by protamine-zinc insulin and diet
13.7%	(22)	controlled by diet alone
4.3%	(7)	controlled by plain and protamine insulin
3.1%	(5)	controlled by plain insulin

The average interval between visits of the patients to the clinic in 1934 was six weeks, and in 1939 it was ten weeks; at present it is ten weeks. The severity of the condition and the cooperation of the patient are the chief factors which determine the length of the interval. If there is evidence that a patient is persistently violating instructions, he is warned in the presence of a house physician and a nurse. A notation is made on the chart that he has received his first warning and must show improvement within thirty days. If at the end of thirty days the patient's lack of cooperation continues and there is no improvement, he is given a second warning and required to re-

port at the end of an additional thirty days. Thereafter if he still continues to disregard instructions, he is excluded from all benefits of the institution including insulin and medical services. Notice of this procedure, carrying the authority of the Welfare Board, is posted where it can be read by the other diabetic patients. One further consideration in this connection is that with the consent of the physician in charge the patient who has been excluded may be reinstated.

It has been the practice in this clinic to keep the blood sugar level at approximately 120 to 130 milligrams per hundred cubic centimeters. It is believed that maintaining the blood sugar value around this level has and will prevent many reactions from insulin among these patients. While there is a difference of opinion it is frequently claimed that the incidence of tuberculosis is higher among diabetic patients than in the average population. In this series it has been lower than that of the general population. Relatively high blood sugar values with the maintenance of normal or near normal weight may be a factor in keeping this incidence so low.

A painstaking check is kept on each patient coming to the clinic: (1) On the patient's chart the history and the results of the physical and laboratory examinations are recorded. A notation is also made at each visit of the diet, the amount and type of insulin administered, the weight and the date for the patient's return. In children, a record of height is kept. (2) On a calendar kept by the supervisor of the clinic the day the patient is to return is also recorded, as well as the amount of insulin given. (3) The dietitian attends the clinic and records the patient's diet. From her the patient receives details concerning the diet. (4) A member of the social service department also attends so that when it is deemed necessary, the patient's progress can be investigated at home. By means of this combined system it is easy to tell whether or not the patient is cooperating to the best of his ability. In several instances, however, though the patient seemed to be cooperating, the blood sugar determination continued to remain high, and it was discovered that he had been injecting insulin into the same place over and over, thus producing a large, brawny, indurated area. With a change to other areas and the use of the same amount of insulin, the sugar content of the blood returned to the desired level. It is important to stress to the patients the use of different areas on injecting insulin.

In treating a patient with diabetes one may become prone to forget the possibility of concomitant disease. The analysis of this series of cases revealed that in 50 cases or 31.2 per cent some other disease was present concurrently *(table 2)*.

TABLE 2. OTHER DISEASES OCCURRING IN THE DIABETIC PATIENT

14	Syphilis
18	Hypertension without heart failure*
2	Hypertension and heart failure*
3	Hypertension and cerebral hemorrhage*
3	Pulmonary tuberculosis, in one case associated with hypertension and heart failure
2	Cataract
2	Uterine fibroids
1	Urethral caruncle
2	Thyroid enlargement (one unilateral, one bilateral)†
1	Lymphopathia venereum
2	Hypertrophic arthritis

*No attempt is made here to classify the hypertension although it was mainly arteriosclerotic.
†In both patients the basal metabolic rate was within normal range.

During the period of the operation of this clinic, 55 patients with diabetic coma were admitted to the hospital *(table 3)*. This number does not include patients with mild acidosis or those requiring regulation. Of these 55 patients, 31 died, a mortality of 58 per cent. The interesting and outstanding factor is the difference in the mortality rate among the treated and untreated patients with coma; of 33 who had not had previous treatment 29 died, a mortality of 87.9 per cent; among the 22 who had had previous treatment only 2 deaths occurred, a mortality of 9 per cent. The records show that in every instance in which serious complications arose, notations had been made previously that the patient was noncooperative. On the other hand, there were extremely few complications, all minor, in cases in which the patients were cooperative.

TABLE 3. DIABETIC COMA

Coma or impending coma*	55 cases
Deaths	31 cases
Deaths among patients who did not attend the clinic or have previous treatment	29 cases
Deaths among clinic patients	21 cases
Mortality rate among those who did not attend the clinic or have previous treatment	87.9%
Mortality rate among those who attended the clinic	9%

*Stupor, but not complete unconsciousness.

Why is the mortality rate higher in the patient with diabetic coma who has not had previous therapy? In considering the prognosis in diabetic coma age, sex, blood sugar values, urinary sugar,

acetone content of the urine and the blood, and the carbon dioxide combining power must be considered. It is not known which of these is the chief factor in making a prognosis. In one patient the sugar content of the blood may be 500 mg. without acetone while in the next one it may be 300 mg. with acetone 4 plus. Too, diabetic patients die when the reaction for sugar in the urine is negative. Has the threshold for sugar been raised? The urine of six patients in this series was examined for acetone just before death; in 3 it was acetone free, in 1 it showed a trace, and in 2 it was 1 plus. Had the kidney threshold for acetone been raised? It is also known that of 2 patients in coma, the one with the lower carbon dioxide combining power may survive while the other with the higher combining power may die. Of course, as a rule, the lower carbon dioxide combining power the greater is the acidosis. The longer a patient is in coma the less is his chance for survival.

On an average in this series the patient who had previously been given insulin was in coma about twenty-four hours before admission, whereas the one who had not had it was in coma about forty-eight hours prior to admission. This longer period of exposure of the cells of the body to acidosis certainly must play a part in the prognosis. In commenting on the mortality, it might simply be stated that the majority of the patients died in less than sixteen hours, and several died within the period of one and one-half to eight hours after admission. A great number of complications and other factors arise that make it advisable to require hospitalization for the diabetic patient. Apparently, regardless of hospitalization and proper management, either medical or surgical, or both, a certain percentage of the patients will not recover. In addition to proper management and hospitalization, two factors are outstanding in determining the prognosis: (1) the degree of severity of acidosis plus the length of time acidosis has been present, and (2) the severity of the complicating factor plus the length of time it has been present.

Since the establishment of the clinic, it has been necessary to admit 72 of the diabetic patients to the hospital because of a complication or concurrent disease or injury *(table 4)*. This number does not include those admitted in coma, on account of mild acidosis, or for regulation. Of the patients thus admitted, 14, or 19 per cent, died. The concomitant factors in the cases that terminated fatally were: (1) Fracture: One patient had a compound fracture of both the lower extremities, and a second one had a fracture of the neck of the femur with subsequent pneumonia. (2) Cellulitis: One patient had severe cellulitis of the right leg and thigh. (3) Abscess: One patient had scrotal and perineal abscess with urinary extravasation. (4) Cerebral hemorrhage: Four patients had cerebral hemorrhage. (5) Myocardial failure: Two patients died of cardiac failure. (6) Gangrene: This complication was the most common and serious factor as it caused 28.0 per cent of the deaths. Of the 17 patients in the series with gangrene of the toes, feet, or legs, or a combination of these areas, 14 were subjected to amputation and 4 died. One had a pulmonary embolism; in another uremia developed.

If coma is included as a complicating factor, it becomes the outstanding cause of death. Of the 55 patients hospitalized because of coma 58 per cent died, whereas of the 72 admitted to the hospital because of complications, concomitant disease or injury only 19 per cent died. The fact that 93.6 per cent of the patients dying in coma had not attended the clinic offers an important reason for maintaining a diebetic clinic.

TABLE 4. HOSPITAL ADMISSION OF DIABETIC PATIENTS FOR OTHER CAUSES*

Gangrene of toes, feet, legs or combination	17
Cellulitis	16
Abscess (single or multiple)	14
Fracture	4
Cerebral hemorrhage	4
Myocardial failure	4
Operation: 2 appendectomies, 1 hysterectomy, 1 gastroenterostomy	4
Carbuncle	3
Pneumonia	2
Acute catarrhal cholangitis and hepatitis	1
Pulmonary abscess	1
Questionable chronic cholecystitis	2
TOTAL	72

*Patients admitted because of coma and mild acidosis or for regulation are not included.

SUMMARY AND CONCLUSIONS

From the study and analysis of the cases of diabetes observed in the last fifteen years at the Duval County Hospital, the following conclusions are warranted:

1. Diabetes, even the severe type, can be controlled if strict discipline is applied. Complete cooperation on the part of the patient is necessary. This can be secured only by explaining the disease to him and convincing him that he can and will be checked for failure to follow instructions with regard to insulin and diet.

2. Diabetes occurs more frequently in women than in men. The average age was 46.8 years in the series of cases presented.

3. The majority of the cases can be controlled by protamine zinc insulin and diet.

4. In 31.2 per cent of the 160 cases observed in the outpatient department of the Duval County Hospital during 1941 complication or concomitant disease occurred.

5. Coma, gangrene, cellulitis and abscess were the outstanding complications.

6. The maintenance of a diabetic clinic is an invaluable aid in controlling the diabetic patient. The mortality rate from coma among the patients who had not had treatment was 87.9 per cent, whereas among those who had received previous treatment it was 9 per cent. It follows that for a patient in coma who has had no treatment, the prognosis is much worse than for one who has had previous insulin therapy.

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THE USE OF EUCUPIN FOR THE PREVENTION OF POSTOPERATIVE PAIN IN PROCTOLOGIC SURGERY

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Postoperative pain following anorectal operations has always been considerably greater and more prolonged than pain following operations in most other regions of the body. Many patients are aware of this fact and approach such surgical procedures with the firm belief that agonizing, continuous and, at times, unbearable pain must be experienced, not to mention the added agony of the first bowel evacuation. Thus, it is not surprising that the majority of patients wish to avoid anorectal surgery and drag around with their trouble for years rather than seek relief. This delay on the part of the patient in seeking proper medical and surgical attention often causes a minor ailment to develop into one of a more serious and extensive nature; therefore, it becomes obvious that any method which will alleviate postoperative pain is one of the greatest benefactors of mankind.

Proctologists have long felt the need for such an anesthetic, and it is to them that the profession is especially indebted for the development of local anesthetics that have proved of inestimable value in preoperative and postoperative procedures. It is also greatly indebted to the chemists who have made possible newer and better preparations for the alleviation of pain.

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One of the first preparations developed for producing prolonged analgesia was introduced by Yeomans, Gorsch and Mathesheimer[1] in 1927. Known as benacol, it was an oily solution that produced unusually prolonged anesthesia. It consisted of:

Para-aminobenzoyl ethanol benzoate	5.00 cc.
Phenmethylol	5.00 cc.
Oil of Sweet Almond	90.00 cc.

This preparation was of particular value in the treatment of pruritis ani, but one had to guard against injecting it into the skin because of the possibility of producing a slough. About one year later, Gabriel[2] of London described two modified oily solutions which he called A. B. A. No. 1 and A. B. A. No. 2. The formulas were as follows:

A. B. A. No. 1

Anesthesin	3.00 cc.
Benzyl Alcohol	5.00 cc.
Ether	10.00 cc.
Sterilized Olive Oil	82.00 cc.

A. B. A. No. 2

Procaine	0.05 cc.
Benzyl Alcohol	10.00 cc.
Phenol	1.00 cc.
Sterilized Olive Oil q. s. ad.	100.00 cc.

Soon after the introduction of Gabriel's solutions, there appeared another similar to A. B. A. No. 1 called "St. Mark's Solution." It was used not only for its efficacy in the treatment of pruritis ani, but for its prolonged analgesic effect in other anorectal operations. Brenner[3] obtained excellent results with this solution in over 100 cases and then had 8 patients consecutively who exhibited great pain and sloughing. In 1935, Barr[4] announced another anesthetic in an oily vehicle. His formula was as follows:

Benzocaine	3.00 cc.
Benzyl Alcohol	10.00 cc.
Phenol	1.00 cc.
Sterilized Olive Oil	86.00 cc.

This preparation was similar to "St. Mark's Solution," but the ether was omitted and benzocaine was substituted for procaine. Its analgesic properties were similar to those of the other oily preparations. The chief advantage of this solution was in the omission of ether. Heretofore, patients had complained of the taste of ether after infiltration, and its removal was a decided improvement.

These solutions rapidly attained popularity among proctologists. Soon, however, rectal surgeons began to report alarming tissue reactions as evidenced by great induration, the formation of

abscesses and sloughing. These reactions were thought to have resulted from the pooling of the solution in the perianal tissues instead of its even distribution. Whether this result was due to faulty technic, too highly concentrated solutions, or one or more of the ingredients was not definitely known. Nevertheless, these undesirable tissue reactions unfortunately occurred even with treatment in the hands of careful and experienced men. These facts alone make the indiscriminate use of oil anesthetics in anorectal operations inadvisable since alarming tissue reactions are possible, especially when these solutions are employed by those not thoroughly familiar with this type of anesthesia.

In consideration of the factors mentioned, it becomes obvious that the primary need is for a water-soluble anesthetic of low toxicity that will give prompt anesthesia lasting from five to eight days and not attended by tissue reactions or sloughs. I feel that such a preparation has at last been produced and I should like to report the results I have obtained in 35 consecutive cases (table 1) using eucupin-procaine solution as an anesthetic agent of prolonged action.

Eucupin,* iso-amyl-hydrocupreine, is a cupreine derivative and somewhat closely related to quinine, but differs greatly in its anesthetic and germicidal efficacy. The local anesthetic action of eucupin was first described by Morgenroth and Ginsberg[5] and was reported to be from twenty to twenty-five times stronger than cocaine, although chemically it is not related to cocaine, procaine, or the other benzoyl esters. It also has a powerful bactericidal action as confirmed by Bruhn,[6] who reported it to be forty times more effective than phenol against staphylococci and streptococci, which are the most frequent causes of wound infection. Morgenroth and Bieling[5] also demonstrated that the compound was especially effectice against Bacillus tetani and Bacillus welchii. Bieling[7] discovered that the organisms of diphtheria, anthrax, malignant edema and tetanus, and the progenic cocci were destroyed by a solution of eucupin in a concentration of 1:10,000 even in the presence of protein.

The toxicity of eucupin is low, actually less than one-sixth that of cocaine and but slightly greater than that of procaine when administered by subcutaneous injection. It is neither advisable nor necessary, however, to use solutions of greater strength than 0.2 per cent for the purpose of infiltration anesthesia. Furthermore, eucupin is of great advantage when large quantities of the solution are used either for infiltration or for topical application.

This drug should be kept protected from light while stored, but it is stable otherwise and can be autoclaved without deterioration. Precipitation occurs when it comes in contact with alkalis; therefore, if the syringe has been boiled, it is advisable to wash it thoroughly in distilled water before filling it with eucupin.

De Takats[8] in 1926 reported on the use of a 1:1,000 solution of eucupin in combination with procaine and tutocain in 100 operative cases which included repair of hernia, thyroidectomy and minor surgical procedures about the head, face and neck. By this method, he obtained postoperative analgesia lasting about twenty-four hours. The solution did not cause tissue reaction, nor any disturbance in wound healing as shown both by microscopic section and by clinical observation of a large number of operative cases. He was particularly impressed with the powerful antiseptic property of eucupin.

In 1936, Kilbourne[9] reported his observations on the use of eucupin. He employed it as a topical application in 0.75 per cent solution and obtained excellent results after operation for anal fistula, pilonidal sinuses and hemorrhoids. Like de Takats,[8] he was greatly impressed with its bactericidal qualities in addition to its prolonged anesthetic action.

Manheim and Marks[10] two years later reported their observations in 14 operative cases, 1 of anal ulcer and 13 of hemorrhoidectomy, in which eucupin-procaine in saline was used. Only 3 patients required an opiate for postoperative rectal pain. Normal healing was noted in all, and analgesia lasted for from three to seven days. In 1938, Brenner[3] reported excellent results in 132 cases following anorectal operation, but he used eucupin solution in oil.

In my series of cases, I have been primarily interested in abolishing postoperative pain by the use of eucupin-procaine solution; therefore, it has been my routine to infiltrate the perianal tissues at the conclusion of the operation. The operative procedures have for the most part been performed under local, general, spinal, sacral or intravenous anesthesia with pentothal sodium.

On completion of the operation, the skin is again painted with tincture of mercresin or tincture of merthiolate, and from 3 to 32 cc. of eucupin-procaine solution is injected with a twenty

*The eucupin solutions used for this investigation were supplied through the courtesy of Rare Chemicals, Inc., Nepera Park, N. Y.

gauge, 2 inch needle. The technic I have worked out is as follows: The needle is first inserted at the three o'clock position, one inch from the anal margin. From 2 to 3 cc. of solution is injected fanwise just beneath the perianal skin from one to five o'clock, then with the left index finger inserted into the anal canal, about 7 or 8 cc. is infiltrated into the deeper perianal tissues around the sphincter from one to five o'clock. The solution is injected as the needle is withdrawn to prevent pooling in the tissues.

The needle is reinserted on the left side at the nine o'clock position and about 10 cc. of solution is deposited as described on the right side. The needle is next inserted on the posterior commissure about 1 inch from the anal margin, and 5 cc. of solution is injected into the superficial and deep perianal tissues. The remaining 5 cc. is injected in the anterior commissure in a similar manner. With the injection completed, the entire perianal region is gently massaged to insure an even distribution of the solution. A plug of gauze tape impregnated with warm vaseline is then inserted into the anal canal to stop any oozing of blood. This is always removed in from six to eight hours following operation.

During this period there is occasionally slight to moderate discomfort, and one or two injections of pantopon or morphine may be given. After the rectal plug is removed, there is, as a rule, no further distress, and the operation site remains anesthetized for from four to eight days. Hot sitz

TABLE I. THIRTY-FIVE ANORECTAL OPERATIONS

NAME	OPERATION	EUCUPIN	SEDATION	STOOL	RESULT
1. A. M.	Incision and drainage of perianal abscess	6 cc.	Codeine Gr. 1	2nd day; No pain	Excellent
2. H. E.	Incision and drainage of ischiorectal abscess	10 cc.	None	2nd day; No pain	Excellent
3. R. S.	Excision of external and internal piles	20 cc.	Pantopon Gr. 1	3rd day; No pain	Excellent
4. H. E.	Incision and drainage of anal fistula	10 cc.	None	2nd day; No pain	Excellent
5. M. C.	Excision of external pile and fissure	10 cc.	None	3rd day; No pain	Excellent
6. E. T.	Excision of anal fistula	20 cc.	None	3rd day; No pain	Excellent
7. C. G.	Excision of external and internal piles, crypts and polypi	20 cc.	Morphine Gr. 1/4	3rd day; No pain	Excellent
8. E. S.	Excision of external thrombotic pile	3 cc.	None	2nd day; No pain	Excellent
9. J. F.	Excision of external and internal piles, ulcer and crypts	20 cc.	Morphine Gr. 3/4	2nd day; No pain	Good
10. R. F.	Excision of external and internal piles, crypts, polypi	30 cc.	None	3rd day; No pain	Excellent
11. G. C.	Excision of anal fistula, anal ulcer and crypts	30 cc.	Morphine Gr. 1/4	3rd day; No pain	Excellent
12. L. C.	Excision of anal ulcer, fistula and hemorrhoidal tag	10 cc.	None	2nd day; No pain	Excellent
13. O. C.	Incision and drainage of rectal abscess	25 cc.	None	2nd day; No pain	Excellent
14. O. C.	Excision of anal fistula and anal crypts	30 cc.	Pantopon Gr. 1/3	3rd day; No pain	Excellent
15. J. F.	Excision of anal ulcer, fistula and external pile	15 cc.	None	3rd day; No pain	Excellent
16. R. R.	Excision of thrombotic external and internal pile	5 cc.	None	2nd day; No pain	Excellent
17. E. R.	Excision of anal crypts and polypi	22 cc.	Pantopon Gr. 1/3	2nd day; No pain	Excellent
18. V. J.	Excision of external and internal piles	30 cc.	Pantopon Gr. 1/3	6th day; No pain	Excellent
19. T. H.	Excision of thrombotic external pile	5 cc.	None	2nd day; No pain	Small slough Excellent
20. J. R.	Excision of anal ulcer, internal and external piles	20 cc.	Morphine Gr. 12/4	3rd day; Pain	Poor
21. M. A.	Excision of external and internal piles	32 cc.	Pantopon Gr. 1/3	5th day; No pain	Excellent
22. I. H.	Incision and drainage of ischiorectal abscess	10 cc.	None	3rd day; No pain	Excellent
23. L. B.	Excision of anal polypi	3 cc.	None	4th day No pain	Excellent
24. L. A.	Excision of internal and external piles	30 cc.	None	4th day; No pain	Excellent
25. E. T.	Excision of fistula, external piles and ligation internal piles	25 cc.	None	3rd day; No pain	Excellent
26. O. B.	Excision of thrombotic external pile	10 cc.	None	2nd day; No pain	Excellent
27. L. B.	Excision of internal and external piles	24 cc.	Morphine Gr. 12/4	4th day; No pain	Poor
28. A. L.	Excision of internal and external piles and anal polypi	30 cc.	Morphine Gr. 1/4	3rd day; No pain	Excellent
29. F. P.	Excision of anal ulcer, external and internal piles	30 cc.	Morphine Gr. 1/4	2nd day; No pain	Excellent
30. L. E.	Excision of thrombotic external pile	8 cc.	None	2nd day; No pain	Excellent
31. W. B.	Excision of fistula, internal piles and anal ulcer	30 cc.	Morphine Gr. 1/4	3rd day; No pain	Excellent
32. P. B.	Excision of external pile and rectal polyp	5 cc.	None	3rd day; No pain	Excellent
33. T. V.	Excision of external and internal piles	30 cc.	Pantopon Gr. 6/3	3rd day; Pain	Good
34. M. W.	Excision of external and internal piles, polyp and crypts	30 cc.	Morphine Gr. 3/6	2nd day; No pain	Excellent
35. E. F.	Excision of internal and external piles, polypi and fissure	30 cc.	Morphine Gr. 2/4	4th day; No pain	Excellent

baths for fifteen or twenty minutes three times daily are started the following day and kept up for the next ten or fifteen days. "Surgical" liquids are allowed the first postoperative day, nourishing liquids the second, and a soft diet the third day. Liquid petrolatum, 1 ounce twice daily, is started on the evening of the first postoperative day. Bowel movements consisting of a soft formed stool usually occur on the second or third day after operation and cause little, if any, discomfort. Only 2 patients in this series complained of severe pain; both were highly neurotic. A small superficial slough was observed in the case of an elderly woman on whom an extensive hemorrhoidectomy was performed with the removal of a large amount of tissue. This, however, resulted in no delay in healing.

SUMMARY

1. The postoperative injection of eucupin-procaine solution in 35 consecutive cases of anorectal operation forms the basis for this report.

2. Excellent postoperative analgesia was obtained in all but 2 cases.

3. The duration of analgesia was from four to eight days.

4. Except for one small superficial slough of the skin, no unusual tissue reactions were observed.

5. No toxic or systemic symptoms were noted in any patient.

6. There was no delay in healing.

7. Bowel movements usually occurred on the second or third postoperative day with little or no discomfort.

8. The results obtained in my cases following the use of eucupin-procaine solution have been so gratifying from the standpoint of comfort to the patient that I am encouraged to continue its use as a part of the operative technic.

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316 Exchange Bldg.

SPINAL ANESTHESIA

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TAMPA

Although the cerebrospinal system was described by Magendie[1] in 1825, it was not until 1885 that Corning[2] first utilized this knowledge in producing spinal anesthesia. Since that time it has been investigated by many men, who have made some contribution to the knowledge of spinal anesthesia. The mortality from the use of this form of anesthesia at first was high; it was not the toxicity of the drug but rather its improper use that established the danger. Today it has become one of the safest procedures when used by those skilled in its administration.

PHYSIOLOGY

Spinal anesthesia is produced by introducing an anesthetic agent into the subarachnoid space. The agent then diffuses in the spinal fluid where it comes in contact with the roots of the spinal nerves. The fluid is then absorbed by these nerves. The extent and degree of the anesthesia depends on the rate of diffusion and the concentration of the anesthetic agent in the spinal canal. Anesthesia of the posterior roots is greatest because of their position and greater affinity for local anesthetics. Small injections in the lumbar segment affect the perineum first, then the genitals and the inner surface of the thighs, and finally the soles of the feet. Larger doses cause the anesthetic to spread to the legs and upward from the symphysis to the costal margin. Sensations of pain and temperature are lost first, next tactile sensation and then motor sensation. Shortly after the injection of the anesthetic agent there is a feeling of warmth and tingling of the lower extremities followed by a feeling of heaviness and swelling with a loss of motor power.

DRUGS EMPLOYED

Procaine, marketed under various names such as novocain, neocain, spinocain, gravocain, nupercain and pantocain, is the only drug used in spinal anesthesia that has gained general acceptance. Neocain is used extensively in France. Many surgeons in this country like it for surgery of the head and neck because it has a less profound effect on the higher vital centers. The motor fixation with neocain is very unstable. Spinocain is an alcoholic solution mixed with a nondiffusible agent lighter than spinal fluid. It

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unites with nerve tissue slowly, and the union is prolonged. Gravocain is another nondiffusible anesthetic agent heavier than spinal fluid. It has been used a great deal in operative obstetrics. Both spinocain and gravocain because of their nondiffusible property localize the anesthesia to the nerves around the area injected. Nupercain has been used as a supplement to novocain in amounts of from 5 to 7.5 mg. to prolong the effect of the novocain. Pantocain is novocain to which a butyl radical has been added for the purpose of lessening the specific gravity of the spinal injection through the use of a greatly reduced dose. The dose of pantocain is one tenth that of novocain. Pantocain unites with the nerve roots more slowly, and the union is about twice as long as with novocain.

The most widely used drug in spinal anesthesia is novocain crystals put up in ampules of 50 to 300 mg. When novocain is injected into the spinal canal, it diffuses readily. It has a graded affinity for nerve tissue, which is much less for motor nerves than for sensory nerves. Because of this greater affinity for sensory nerves it unites with them rapidly. The nerve block caused by this union is not stable, and because of this fact novocain is the safest of the drugs used. Other drugs with a slow fixation time and a prolonged block are not as safe. The instability of novocain fixation with nerve tissue is the important and vital factor which permits its use in general spinal anesthesia.

PREOPERATIVE MEDICATION

Some form of sedation is advisable in all patients. The barbiturates can be and are widely used although it must be borne in mind that a small dose makes the patient nervous and a large dose leaves the patient semiconscious. A good rule is to give a fairly large dose of a barbiturate the night before to insure a good night's sleep, and then one hour before operation to give morphine hypodermically with or without atropine. Some operators like to combine morphine and scopalomine, giving them one hour before operation. Any form of preoperative medication is satisfactory if it gives the desired result. A point to remember is that if amytal is used, it may cause shallow and stertorous breathing and a drop in blood pressure.

INSTRUMENTARIUM

Equipment includes one 2 cc. syringe with a twenty-five gauge needle 1 inch long, one 5 cc. syringe with an eighteen gauge needle 2 inches long, two spinal puncture needles, size 20 or 22 with smooth round points that are short and beveled, ampules of novocain crystals of the desired dosage, one ampule of ephedrine novocain, an ampule file, gloves, sponges, sponge holder and an antiseptic, either merthiolate, mercresin or iodine, whichever is preferred by the anesthetist. These are all placed on a Mayo table and kept sterile.

TECHNIC WITH NOVOCAIN CRYSTALS

The patient is turned on his side, the legs are drawn upward and the neck downward. The back is prepared as for surgery and then draped with sterile towels. The spinous processes of the lumbar vertebrae are marked with the thumb nail of the gloved hand. The site selected for injection depends on the type and duration of the operation. At this point the solution of ephedrine novocain is injected. The top of the ampule containing the desired dosage of novocain crystals is removed, and the ampule is placed on the Mayo table ready for use. A spinal puncture needle is then inserted into the spinal canal through the point which was previously injected with the solution of ephedrine novocain. The fluid is then allowed to drop into the ampule containing the crystals, or is collected with the 5 cc. syringe. About 1½ cc. of fluid is collected. The crystals are then dissolved in the solution either by agitation or by alternately withdrawing and expelling the fluid in the ampule. When the crystals are completely dissolved, the solution is drawn up into the 5 cc. syringe by means of the eighteen gauge needle. This needle is then removed and the syringe is attached to the spinal puncture needle, which has remained in the spinal canal. If a greater dilution is required, more spinal fluid may be withdrawn at this time; if not, a few drops may be withdrawn just to insure that the needle is still in the canal. The contents of the syringe are then injected into the canal. To insure that the needle remains in the canal, barbotage may be done. This causes a greater dilution of the fluid and a shorter period of anesthesia. After the fluid has been injected, the patient is turned on his back and allowed to remain in this position for a few minutes. Thus the nerves at the point of injection become anesthetized. The patient is then placed in the Trendelenburg position at an angle of from 10 to 15 degrees to allow diffusion of the anesthetic agent upward.

CAUSES OF FAILURE IN SPINAL ANESTHESIA

The effective use of spinal anesthesia may be hampered by the poor position of the patient on the table, motion during injection and anomalous bony structure. Penetration of the needle into the posterior arachnoid septum, or only partial puncture of the arachnoid, gives a dry tap. The needle may become plugged, or it may penetrate the dura and enter the cord. Pulling the needle partly out during the injection may cause failure. Aspiration of fluid may be difficult because the needle may enter a small pocket containing little fluid. The use of long beveled needles may allow only partial injection of the anesthetic. Resterilization of ampules may cause failure. In a certain percentage of cases desired results will not be obtained proportional to the anesthetist's ability.

EFFECT ON BLOOD PRESSURE AND RESPIRATION

Blood pressure falls because of vasodilatation. The constrictor fibers emerge through the anterior roots of the dorsal and lumbar nerves and pass through the white rami to join the sympathetic ganglions of the thoracic and lumbar chain. The degree of fall in pressure is in direct proportion to the amount of paralysis of the sympathetic nerve supply. The higher the anesthesia the greater the fall and vice versa. Vasodilatation must be prevented as much as possible. The preliminary injection of ephedrine and the utilization of the Trendelenburg position so that the blood may flow by gravity back to the heart are preventive measures.

The effect of spinal anesthesia on respiration depends on the height of the anesthesia. Anesthesia up to the seventh dorsal segment has little if any effect on respiration. If it extends up to the fourth cervical segment, the phrenic nerve as well as all of the intercostal nerves becomes inactivated. Even under these circumstances respiration is still maintained through the sympathetic nerves if the arterial tension has been maintained through the combined use of ephedrine and the Trendelenburg position.

ADVANTAGES OF SPINAL ANESTHESIA

Complete relaxation, which permits faster and more accurate work, is one of a number of advantages of spinal anesthesia. Also the patient is conscious and may help in certain procedures. The brain, liver, kidneys, adrenals, heart and lungs are not damaged. Gas pains and shock are reduced. Postoperative pain is less. Morbidity is reduced. Convalescence is shorter. Liquids may be taken before, during and after operation. The intestines are contracted instead of dilated. Fewer packs are used. The possibility of hernia is reduced. The alkali reserve is less affected. The processes of metabolism and oxidation are normal. The blood urea is only slightly changed. Body cells are at rest, requiring less oxygen and sugar. For the senile patient there is no bronchial irritation. Postoperative bronchitis and pneumonia occur less frequently. There are no after-effects as in inhalation anesthesia. Fewer postoperative catheterizations are necessary. There is no danger of explosion with spinal anesthesia.

DISADVANTAGES

The chief disadvantage in this type of anesthesia is that it requires a constant watch on blood pressure and respiration. Other disadvantages are that the patient is awake and conscious of all that is going on about him and that administration of the anesthetic agent requires one who has been trained and understands the physiology of spinal anesthesia.

INDICATIONS

Spinal anesthesia is indicated in all cases in which complete relaxation is essential, as in fracture and operation upon the rectum, vagina and urethra, in visceral operations and exploration of the abdomen, in the presence of cardiac or pulmonary disease, in diseases of the liver and kidneys, and in diseases of disordered metabolism such as diabetes. In cases of reasonably high blood pressure its use is desirable, but the preliminary administration of ephedrine is omitted. In cases of low blood pressure it may be used providing any further drop is counteracted by ephedrine. It is indicated in cases of deep hemorrhage and in those in which the patient has recovered from hemorrhage. In cases of shock it is desirable only if the shock is relieved by spinal injection. It is of value in cases in which negative abdominal pressure is necessary. In testing for functional intestinal obstruction it is indicated and also in cases of obstruction when there is vomiting and aspiration pneumonia is feared. It is to be preferred in cases of general or local peritonitis, in cases of strangulated hernia or intussusception and in those of emaciation and obesity. It has been used in eclampsia.

CONTRAINDICATIONS

Inexperience and a lack of confidence on the part of the surgeon, and lack of facilities for ob-

taining the Trendelenburg position are contraindications for the use of this form of anesthesia. It is contraindicated in cases in which there are lesions of the spinal cord and brain such as tumor, hemorrhage, syphilis, meningitis or brain abscess, and also in cases of bilateral empyema or collapsed lung as well as in cases of uncompensated heart failure or those in which there is an insufficient heart reserve. In cases of acute or chronic severe anemia, in moribund cases, in cases in which there is a very low blood pressure or a very low hemoglobin content of the blood and in those of septicemia it is likewise contraindicated.

COMPLICATIONS AND MORTALITY

Nausea and vomiting are usually due to psychic causes or to visceral traction. They are relieved by less traction, the application of cold towels, deep breathing, a steep Trendelenburg position, and the administration of ammonia, oxygen or epinephrine.

Vasomotor paralysis should be prevented by the preliminary administration of ephedrine, but if it occurs, it is treated by the use of epinephrine, a steep Trendelenburg position, oxygen and saline solution administered intravenously. Respiratory paralysis occurs when the anesthetic agent diffuses up to the fourth cervical segment. Artificial respiration must then be given. Palsies and paralysis have been reported, but they are observed rarely. Occasionally an ocular palsy occurs due to a meningismus, but it clears up quickly. Paralysis of the feet, toes and sphincters is not due to the anesthetic, but to injury to strands of the cauda equina. This can be prevented by the use of small, smooth, round, beveled needles. Meningitis is a rare complication. It occurs only when asepsis is not complete, or when the skin over the site of puncture is infected. Meningismus may be due to chemicals, but is usually caused by blood in the spinal canal. Rest and removal of the blood give relief. Intracranial shock is caused by intracranial hemorrhage or tumor and does not occur if a proper history is taken and if the small volume technic is used. Herniation of the medulla into the foramen magnum occurs only if large amounts of fluid are removed. Headache is usually due to escape of fluid into tissue. It can be prevented by proper technic and needles. When it occurs, it is treated by the use of the Trendelenburg position, fluids administered intravenously, ephedrine, spinal drainage or narcotics.

Postoperative urinary retention can be prevented by the use of an indwelling catheter for several hours after the operation. It is treated by infrequent catheterization.

Shock owing to lumbar puncture and death are seldom observed. They do not occur if the contraindications to spinal anesthesia are heeded. At the present time figures pertaining to the mortality rate for spinal anesthesia limited to the subdiaphragmatic areas show that death occurs in 1 case in from 7,000 to 10,000 cases.

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MULTIPLE MYELOMA

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Multiple myeloma owes its clinical entity as a disease to the finding of the Bence-Jones bodies in the urine in 1845. Sir James Watson[1] observed that the urine of one of his patients would almost solidify on heating and then with continued heating become liquid again. He sent a specimen to Sir Henry Bence-Jones,[2] who found the odd reaction was caused by the presence of an oxide of albumin. A year later Dalrymple[3] discovered that the disease had its origin in the cancellated structure of bone. Rustizky[4] in 1873 gave the disease its present name. The first description of multiple myeloma in connection with the excretion of Bence-Jones protein bodies in the urine was written by Kahler[1] in 1899. Years later Wright[1] discovered that the tumor cells of the bone marrow involved were plasma cells.

According to Wallgren,[2] only 66 cases of multiple myeloma were reported in the literature for the years 1873 to 1920. In 1928 Geschickter and Copeland[5] noted from a complete review of the literature that 424 cases were reported during the period from 1848 to 1928. Ghormley and Pollock[1] mentioned 86 true cases for the period from January 1924 to January 1937. Life insurance statistics[6] give the incidence of this disease as 0.03 per cent of all malignant growths. Rosenthal and Vogel[7] reported that since the use of the sternal puncture for diagnostic purposes its

incidence has greatly increased. They substantiated this conclusion by the statistics of Mt. Sinai Hospital. Only 3 cases were reported there from 1916 to 1935. This number is in strong contrast to the 13 cases observed during the next two and one-half years, all of which were diagnosed by sternal puncture.

The cause of multiple myeloma is unknown. The report of a case of this disease that came to autopsy follows.

REPORT OF CASE

J. K., a white married man aged 32, was admitted to the surgical service of St. Francis Hospital on April 5, 1940. He related that while in swimming a few days previously, as he had opened his arms to pull himself under the water, he had felt a snap in the back of the neck, which was followed by a dull ache. A chiropractor had examined him and had apparently treated the lower part of the back. As no relief from the dull pain followed, after several days he came to the emergency room of the hospital for treatment.

Roentgen examination revealed a compression fracture of the fourth cervical vertebral body. The patient was placed in traction, and a five pound weight was applied. The following day a cast was applied immobilizing the region of the neck. On June 19 he was discharged wearing a metal neck brace.

The patient apparently grew weaker and was readmitted on August 10. He stated that on three or four occasions he had experienced severe pain in the stomach at night as he was retiring and twice had vomited bile. Upon examination at this time, he related that about nine months previously he had fallen a distance of about 12 feet from a ladder, his right shoulder receiving the brunt of the blow. On close questioning he mentioned having had a bloody diarrhea for two or three days while in the hospital the first time, and he supposed he had had about four or five evacuations, losing a considerable quantity of bright red blood. The surgeon had attributed the bleeding to a small fissure in the rectum and believed little blood was actually lost.

Inspection revealed a thin, short man with small bones. He was weak and anemic in appearance; he looked as if he were suffering from some chronic ailment. There were tenderness and deformity over the fourth cervical vertebral body as a result of the fracture four months previously. The chest was moderately well developed. The manubrium of the sternum was depressed with its lateral margins flaring upward, presumably as a result of rickets in childhood. Although examination of the upper extremities revealed nothing unusual, the grip of the left hand was weaker than that of the right. The patient stated that the whole left upper extremity felt weak. There was moderate edema of the ankles that disappeared on elevation. The knee jerks were hyperactive. Roentgen examination of the cervical fracture gave no evidence of healing.

The patient was given a diet to correct the anemia and received a special drink containing vitamins and liver extract three times daily. As he experienced a severe reaction following gluteal injections of reticulogen, iron cacodylate given intravenously was substituted. On two occasions three days apart he received 250 cc. of citrated blood. The response caused an increase of the red cell count to 2,680,000 and of the hemoglobin to 52 per cent. In the meantime occult blood had been discovered in the stool. A gastric analysis gave no evidence of blood, but absence of free hydrochloric acid was noted. A roentgenogram of the stomach gave rather pronounced indications of a carcinoma. It also showed great rarefaction of the first lumbar vertebral body. About

Fig. 1. Compression fracture of fourth cervical vertebral body.

this time the patient complained of a pain across the ribs in the sixth intercostal space on the left side.

In view of these findings a carcinoma of the gastrointestinal tract had to be considered. Judging from the roentgen studies there was a growth of this nature in the stomach. The clinical evidence that indicated its presence there included the finding of occult blood in the stools, the absence of free hydrochloric acid in the gastric secretion, the meager story of three or four gastric upsets and, strongest of all, the roentgen indications. Against this diagnosis was the fact that gastric lavage revealed no blood in macroscopic or microscopic tests, nor had vomiting of blood or other vomiting occurred while the patient was in the hospital, except during the first roentgen examination. The plyoric end of the stomach could not be felt, but no masses were palpable. There were no indications of the gallbladder or the liver being involved through metastases. The cervical anterior lymph nodes on the left side could hardly be discerned. The posterior cervical lymph nodes were not palpable, nor were the inguinal lymph nodes, but apparently there was definite metastasis to the ribs and vertebral bodies. It would be unusual for a cancer of the stomach to metastasize to bone to the degree indicated and yet fail to affect other organs in this period of time.

Another diagnosis that had to be ruled out was carcinoma of the ascending colon. This is usually insidious in onset and causes a definite anemia with a red cell count of about 2,000,000 and a hemoglobin estimation of approximately 40 per cent. The history of the hemorrhage of bright red blood from the bowel suggested this possibility, and metastasis to the skeletal system was in keeping with this diagnosis. The fact that the patient was more or less constipated was of no great significance. Roentgen studies, made after the giving of a barium enema, gave no evidence of a tumor in this region.

The pain over the rib became more severe. Strapping the chest over this region gave little relief, and this measure was discontinued. A roentgenogram showed an expansile tumor on the left side around the sixth rib near its sternal end. Cerebral irritation was becoming evident at this time. The patient seemed to be only partly conscious of his surroundings, and a little later it was necessary to restrain him in bed.

The patient was given two more transfusions, but seemed to benefit little from them. On August 28 a biopsy was performed upon the rib. The mass was found to be attached to the pleura, and in removing it an artificial pneumothorax resulted, but the patient recovered enough to be removed to his room. Here he was treated for shock and he gradually improved. The pathologist reported a diagnosis of multiple myeloma. The question then arose as to whether or not the patient was suffering from two processes, multiple myeloma and carcinoma of the stomach.

He recovered from shock, but coarse rales and bronchial breathing developed shortly afterward. He was given two rectal infusions of sulfapyridine with good effect on the pneumonic process. The cerebral irritation was so increased that he became unmanageable and an attendant was necessary. A rhythmic tremor of both arms developed. As the intake of fluids was negligible, he received intravenous injections of 1,000 cc. of a five per cent solution of glucose in normal saline twice daily.

Lumbar puncture was resorted to on September 8 in an attempt to allay the great degree of restlessness. The manometer reading was 16 mm. with the patient in the prone position. There was no blockage. About 20 cc. of spinal fluid was obtained in a short time. This measure had a beneficial effect for about twenty hours. The pulmonary symptoms grew more acute, however, and coarse bubbling rales were heard in both lungs. The breathing was labored, and the condition of the patient became critical. Sedation was ordered as needed to keep him comfortable until he expired on September 9.

SUMMARY OF AUTOPSY FINDINGS

Abdomen. As one approached the descending colon a definite constriction or narrowing of the lumen was noticeable. The spleen was relatively small and adherent to the stomach by means of adhesions. The kidneys were rather irregular in shape, lobulated and surrounded by dense fatty perirenal tissue. The capsule peeled easily, but the center of the kidney seemed to be peculiarly marked.

Thoracic Cavity. At the site of the incision, which was entirely closed, a serosanguineous exudate was observed. The pericardium contained about 200 cc. of clear fluid. There were several septal striations partitioning it, and it had a roughened spongelike appearance similar to that of the tongue of a dog. The right pleural cavity contained little or no fluid. The left lung showed hypostatic or bronchopneumonic changes while the right lung was relatively free.

Spine. The fourth lumbar vertebra was located, and a small piece of the body was chiseled out. The chisel fell easily through the anterior part, and a definite metastatic tumor was found.

Skull. The parietal skull on the right side at the frontoparietal suture line was of paper thinness in an area about 4 cm. in diameter. There was erosion to a depth of .5 cm. in this area caused by a dark red, marrow-like, fungating, gelatinous mass, which was limited to the interior of the skull and was fused to the dura. The right cerebral portion of the brain was only depressed and not involved in the process. The brain was wet and weighed 1,300 Gm.

In view of these findings and the results of special study of various specimens, a pathologic diagnosis of multiple myeloma was made.

Fig. 2. Roentgenogram of stomach with indications of carcinoma. It also shows great rarifaction of the first lumbar vertebral body.

Fig. 3. Roentgenogram showing expansile tumor on left side around sixth rib near its sternal end.

Multiple myeloma is essentially a disease of later life. Approximately 80 per cent of all cases occur between the ages of 40 and 70 with the highest incidence at 55 years. There have been only 4 proved cases reported in adults under the age of 35. Three cases have been reported as occurring in children, but there is some doubt regarding the accuracy of diagnosis in these cases. Thus, the case here presented, in which the patient was 32 years old and in which the disease was microscopically verified, is the fifth case recorded in which the patient was under 35 years of age.

Fig. 4. Hemotoxylin and eosin stain of section of the myeloma.

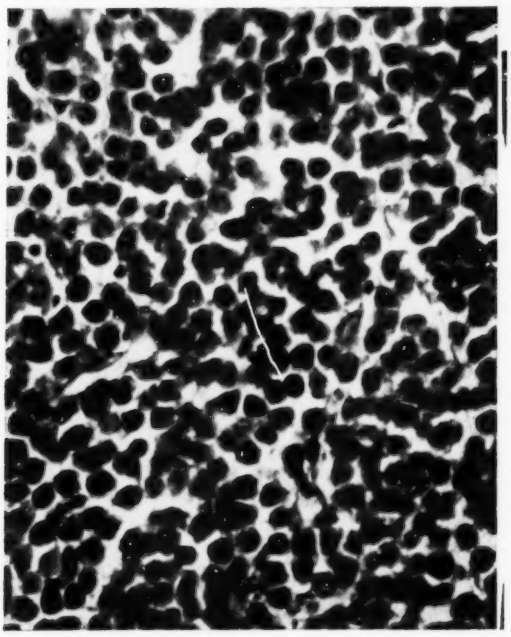

Fig. 5. Iron hemotoxylin stain showing plasma cells in various stages of maturity. Note the eccentrically placed nucleus (x670).

CLINICAL CHARACTERISTICS

Pain. Throughout practically all of the literature pain is given as the outstanding symptom. Initially it is vague and indefinite but it is supposed to be typical in its features later in the course of the disease. Geschickter[5] classified the pain in five stages that he believed typical. The patient in my case had little or no pain except for a short period following fracture of the cervical vertebra when he had a stiff neck.

Tumor. Frequently a tumor is the initial symptom that calls attention to the disease. In 13 of 40 cases reported by Batts,[4] it was one of the presenting symptoms. The distribution and multiplicity of the tumors are cardinal points. Five cases only have been reported with a single focus, and there was no autopsy in these cases. In 90 per cent of all cases there is tumorous involvement of the ribs, sternum and spine. In 40 per cent there is, in addition, involvement of the skull or the extremities about the shoulder or pelvic girdle. It is usual for the sites of the tumors to be extremely painful. In my case there was involvement of the spine, a rib and the skull, but without associated pain.

Deformity. It has long been recognized that deformity is an accompaniment of multiple myeloma but its distinctive peculiarities have not been emphasized. In 60 per cent of all cases thoracic deformities occur, and if the deformity extends to the limbs, it is confined to the region of the girdle. Geschickter and Copeland[5] described a typical sinking in of the gladiolus of the sternum and a parasternal rosary due to a multipicity of small tumors situated parasternally along the ribs and clavicle. Flattening of the lumbar curve, dorsal kyphosis and actual telescoping of the spinal column commonly occur. In the case presented the patient had a sinking of the upper part of the gladiolus of the sternum with a flaring upward of the lateral margins. It was attributed to a probable case of rickets in childhood, but in reality it was caused by the disease.

Fracture. In no other tumor of bone does fracture occur to such a degree. Bloodgood[8] in a study of pathologic fracture reported an incidence of 25 per cent. Geschickter and Copeland[11] recently observed that 62 per cent of pathologic fractures occur in cases of multiple myeloma.

While a pathologic fracture is not infrequently the cause of the first symptom, it is less frequently recognized as an initial sign of the disease. Wallgren's[5] case was diagnosed clinically as exudative pleurisy. At autopsy fracture of

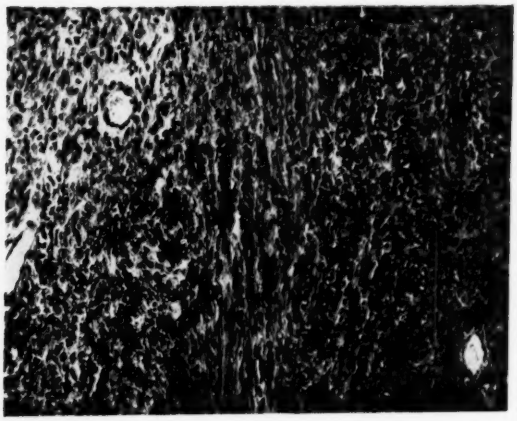

Fig. 6. Hemotoxylin and eosin stain. The cellular tissue is subdivided into irregular islands by septa of dense connective tissue.

the fifth rib was discovered. In the first of the cases reported by Geschickter[5] an early symptom was pain from fracture of a rib, which was not discovered until a year later by careful roentgen study. In my case the fracture was the presenting symptom. It was diagnosed as a fracture and attributed to a dive into shallow water. The patient had not dived, and the fracture was a pathologic one.

The distribution and multiplicity of the fractures are unique. Bloodgood[4] noted that in other pathologic fractures the involvement is almost exclusively of the long bone of the extremities. In contrast, in this disease it is in the trunk. The prevailing location is in the ribs. In the case presented it was in the fourth cervical vertebral body. In other diseases of bone repeated fractures are often encountered in the same bone. In this disease, however, one may observe the occurrence of fracture in several different bones. While both united and ununited fractures occur, no reunion was obtained in my case.

Pulmonary Changes. Chronic bronchitis and emphysema are common in the cases in which there is thoracic deformity. In 55 per cent of all cases deformity of the chest occurs. The patients in cases of this type are in a debilitated, cachectic condition. They have hypostatic pulmonary changes caused by their bedridden state and restricted alveolar ventilation because of painful breathing, factors that contribute greatly to bronchial involvement. Various forms of pleurisy have been reported, and at autopsy deformities of the ribs owing to fracture were found to account for the pleural involvement.

Characteristic pulmonary changes are well illustrated in the case described. Pain in the pleural region developed; later an expansile tumor of the rib formed in this region. Bronchitis developed. The tumor was removed; artificial pneumothorax and collapse occurred. The patient recovered only to succumb to a terminal pneumonia.

Neurologic Manifestations. Neurologic symptoms soon manifest themselves in this disease. Since the bony framework is the natural defense for the nervous system and since it is the point of attack in this disease, they are to be expected. Paraplegia following involvement of the vertebral column is frequent. It, of course, is caused by compression of the spinal cord. Dwindling sexual appetite, trouble in starting the flow of urine and weakness of the legs are early symptoms.

The patient in the case here reported did not experience paraplegia even though the tumor was first found in the vertebral column. Mental changes did occur. They were first made manifest by restlessness and irritability, which made it difficult to keep the patient in bed. Another sign that was probably from spinal pressure was weakness in the left arm. It was insidious in onset and moderate in degree. Late in the course of the disease, there were pronounced signs of cerebral involvement. The condition of the patient would vary from a comatose state to wild delirium and it was difficult to control him. A spinal puncture was done the day preceding his death. The fluid was under increased pressure (16 mm. in the prone position), and about 20 cc. was removed by the gravity drip method. He was not rational for four days preceding his death.

Nephritis. Hammond[3] was of the opinion that chronic nephritis with nonprotein retention and low blood pressure is typical of multiple myeloma. Geschickter[5] observed 4 cases in which hypertension rather than hypotension was present. Usually nephritis of the chronic type is associated with this disease. Gottardi[2] described a case in which the first symptom observed was intermittent hematuria. In my case there was a persistent hematuria. There was at no time more than a trace of albumin. The nonprotein nitrogen was 70.5 mg., and the urea nitrogen was 28.2 mg. per hundred cubic centimeters. The Bence-Jones test gave negative results even after a section of rib had been removed

and diagnosis had been made by microscopic examination. Indeed it was felt that the elevation of nonprotein nitrogen and urea nitrogen resulted largely from the toxic state of the patient rather than from specific nephritis. The role of Bence-Jones protein bodies in the urine is still in debate. Decastello[8] concluded that a previous nephritis was necessary for their excretion. Stovis[5] claimed to have caused nephritis by the injection of these bodies. There is no single theory for the origin of the nephritis that occurs in these cases. In some cases Bence-Jones protein bodies have been reported in the urine unassociated with the albuminuria usually expected. These bodies have been mentioned in 65 per cent of all cases reported. Their presence does not clinch the diagnosis as it has been reported in 12 different diseases, in all of which, however, the bone or bone marrow was involved.

Blood Changes. In only 16 of 70 cases was the red blood cell count over 4,000,000. An anemia with the red blood cell count ranging between 2,000,000 and 3,000,000 occurs most frequently. In my case the count was approximately 2,000,000.

The white blood cell count varies from a leukopenia to normal to a leukocytosis. The unusual feature is the differential count. In 15 cases out of 60, this count showed myelocytes ranging from 1 to 10 per cent, and in 5 cases eosinophils ranging from 3 to 5 per cent. In my case no myelocytes were observed in four differential counts. Two per cent eosinophils were reported in one count. In 38 per cent of one series of cases a high hemoglobin content was noted. In my case it was uniformly low. Also, normoblasts and megaloblasts, which are consistently present, were lacking. The blood picture was the upsetting feature when the patient was first admitted to the medical service. Classifying the anemia caused concern.

From this survey it appears that the blood picture may simulate that of primary anemia with displacement of hemopoietic tissue by tumor elements, or it may correspond to that of secondary anemia with features resembling those of malignant disease. Either condition may predominate and give the blood picture a variable character.

Gastrointestinal Symptoms. In the case described the gastrointestinal symptoms were particularly important. Occult blood was found in the stool shortly after admission of the patient to the medical service. It persisted throughout the course of the disease and was a leading factor in causing consideration to be given to cancer of the intestinal tract as a possible diagnosis.

In most studies, intestinal symptoms are classed as part of an enterocolitis that appears as a terminal complication. Melena, epistaxis and hematemesis are frequent terminal manifestations associated with a lowered platelet count in the advanced stage of anemia. Unfortunately in my case no platelet count was obtained Gastric analysis has been made but rarely, and in the few instances recorded there was usually an absence of free hydrochloric acid. Metastasis of the tumor to the stomach and duodenum was reported by Renji,[5] Martelli,[5] and Morse.[5] In my case free hydrochloric acid was absent in the gastric juice, and blood was present in the stool. Roentgen examination of the stomach filled with barium indicated that it was involved, but postmortem examination failed to verify this observation.

Roentgen Examination. Roentgen studies are typical and are helpful in making a diagnosis. The lesions are characteristically multiple, and in general they are confined to the location of the red bone marrow. Thus they are located centrally in the roentgenograms. Since they are bone-destructive, the skeletal lesions show up as rounded punched-out areas varying in size from a pea to an orange. The ribs, if affected, are usually mottled. At the site of the costochondral junctions there is a tendency for the tumors to appear as areas of bone absorption. Pathologic fracture of the ribs occurs most frequently from the fifth rib down to the twelfth. In my case the sixth rib on the left side was involved, and roentgen studies showed an expanded and rarefied mass.

When the skull is involved, usually multiple punched-out areas, confined to the frontal and upper parietal bones are observed. In my case these changes were noted in the frontoparietal region on the right side at postmortem examination.

Calcium and Phosphorus. Hypercalcemia with normal or slightly elevated serum phosphorus is the rule; however, hypercalcemia with low phosphorus content of the serum may occur. This latter is typical of hyperparathyroidism and may cause some confusion. The calcium con-

tent in my case was 7.5 mg. per hundred cubic centimeters of serum. This estimate is low and not readily explained.

PATHOLOGIC CHANGES

MacCallum[8] described two types of myeloma, (1) the lymphoid or plasma cell type in which the cells are nongranular and mononuclear with basophilic cytoplasm and (2) myeloid myeloma in which the cells correspond to myeloblasts although occasionally they are demonstrated as myelocytes or even erythroblasts. There are two conflicting views regarding the histogenesis. Some believe the cells are various forms of plasma cells derived from the supporting tissues of the blood vessels of the bone marrow. Others believe the cells arise from the blood-forming elements. If the disease is regarded as a hypertrophic tumor of the hematopoietic system, each tumor, skeletal or extraskeletal, can be regarded as a primary growth arising from the same sort of stimulus. There are many writers, however, that regard extraskeletal tumors as examples of true metastasis, but they are in the minority.

PROGNOSIS AND TREATMENT

The prognosis is hopeless. The average duration of the disease is two years after its discovery. Roentgen-ray treatment has been reported as causing remissions, but remissions also frequently occur spontaneously. Since not one proved case has been reported cured, it is evident that only palliative treatment can be offered. The patient in my case was first seen on April 5 and died on September 9, 1940, after an interval of five months and four days.

SUMMARY

A case of multiple myeloma is reported in which the noteworthy features include a presenting symptom of pathologic fracture, the necessity of biopsy for definite proof, the multiplicity of tumors that occurred and the effect of the disease on the different systems. The conclusions resulting from the study of this case are:

1. Multiple myeloma is a rather rare neoplastic disease attacking primarily the tissue of the bone marrow. Its involvement is multiple. Metastasis is rare and questionable. The cells of the growth are plasma cells of myeloid origin.

2. Multiple myeloma is the most frequent cause of pathologic fracture, and it should always be considered in cases of this type.

3. Diagnosis should be relatively easy once the disease is considered. Diagnostic methods include: (a) Biopsy of an involved portion of bone. Diagnosis by this method is reasonably certain if cells typical of myeloma are present in the specimen. (b) Roentgen examination is one of the most important methods although the radiologist may not be able to differentiate between myeloma and metastatic carcinoma. (c) Sternal puncture. This procedure may reveal the characteristic cells even though the sternum is not grossly involved. (d) Hypercalcemia with normal or high content of phosphorus in the serum distinguishes the disease from hyperparathyroidism. (e) Bence-Jones proteinuria, although present in only 65 per cent of the cases of multiple myeloma and occasionally present in other disease, is strongly suggestive of this disease.

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SOUTHERN MEDICAL ASSOCIATION TO HOLD WAR MEETING

Since the press release by the Defense Transportation Director in Washington in June, on the cancellation of all "nonessential" conventions, the Southern Medical Association has received many inquiries upon the status of the plans for the annual meeting in Richmond in November.

The officers of the Southern Medical Association believe that this annual meeting is in no sense a nonessential convention. It should be of definite service to the Government and the people as was the comparable meeting twenty-five years ago during World War I. There are many physicians in the South who will have to broaden their civilian practice next year, will have to do medical work that they have not done in years. In Richmond they will be furnished an opportunity to freshen up in expanded fields, and this will mean better service to the civilian population. Physicians in military service in this part of the country also will be able to discuss medical problems of the armed forces, which demand continuous study. The civilian population must replenish the military branches in any prolonged war, and must be kept in readiness for its duties.

The Association, through the member of its Council in the District of Columbia, Dr. Oscar B. Hunter, has been in contact with the Surgeons General of the Army, Navy and Public Health Service in Washington, that is, Dr. James C. Magee, Dr. Ross T. McIntire and Dr. Thomas Parran. All three indicate that they believe that the Southern Medical Association meeting can make a significant contribution to the war effort. Richmond has been described as a strategic location for this gathering. Just as the American Medical meeting in Atlantic City in June was helpful to military organization and current necessary medical progress, so the Southern Medical in Richmond this fall will contribute to the national need. It is important that medicine not be frozen for the duration of the war. It is believed that the Richmond gathering has the endorsement of official medical Washington, and that no objection will be raised to it from any other quarter.

Section officers and all who are charged with program responsibilities are going ahead in the building of their programs. The activities this year will occupy three days instead of four, and will be confined to Tuesday, Wednesday, and Thursday, November 10, 11, and 12. Hotel reservations already made indicate that the attendance will be good. Hotel reservations should be made through the Hotel Committee, Southern Medical Association, 109 North Fifth Street, Richmond, Virginia.

WINNING THIS WAR IS MOST IMPORTANT SINGLE OBJECTIVE EVER PLACED BEFORE MEDICAL PROFESSION OF THE UNITED STATES

Pointing out that there is a distinct disparity between the applications from physicians coming through various routes directly to the Office of the Surgeon General of the Army, to the Air Force and to the Navy and the number that ought to be immediately available to meet our war needs, The Journal of the American Medical Association, in its July 25 issue, says:

> Let us realize that the winning of this war is the most important single objective ever placed before the medical profession of these United States and give to our nation the same complete, wholehearted, voluntary service on which the nation has learned to depend in the past.
>
> As has been indicated previously in The Journal, many of the states have already given to the armed forces almost every physician that can be spared now. Some of the larger states must supply the personnel necessary for the immediate demands. Elsewhere in this issue . . . is notation of the establishment in several states of additional recruiting boards which are designed to aid the work of the Procurement and Assignment Service for Physicians, Dentists and Veterinarians.
>
> The letter circulated by the Procurement and Assignment Service has brought to the headquarters of that organization great numbers of return postal cards which indicate that many physicians have volunteered and are volunteering in response to the latest appeal. Nevertheless there is a distinct disparity between the applications

coming through various routes directly to the Office of the Surgeon General of the Army, to the Air Force and to the Navy and the number that ought to be immediately available. Certainly the situation is not satisfactory when the armed forces are without a reserve pool from which to draw for an emergency. Everything possible is being done that can be done to hasten action on the applications of physicians through recruiting boards or directly through the Offices of the Surgeon Generals. The drive must continue, however, until some thousands of doctors have been commissioned who will be available for any contingency that may arise.

Again and again The Journal has pointed out that the needs of the armed forces will require that every physician under 45 years of age and physically fit who has not been stated by his state board of procurement and assignment to be engaged in an essential occupation must be made available to the armed forces. The Selective Service Act makes available to the armed forces every male citizen in the United States under 45 years of age. The physician who waits for the draft to pick him up certainly is in an unenviable light before his profession but even more in his own self respect. Little is to be gained by hesitating or holding back until the call comes, as it eventually will have to come from the boards of the Selective Service if the needs of the armed forces are not satisfied.

The Procurement and Assignment Service for Physicians, Dentists and Veterinarians was developed to aid the medical profession in determining for itself equitable distribution of medical service during the emergency. By utilizing its facilities, hospitals are being enabled to retain essential members of their staffs, industries are being enabled to retain necessary physicians and medical schools are being enabled to hold a sufficient number of their faculties to continue medical education. Everything possible is being done to enable individual communities to retain enough physicians to provide needed medical services for the civilian population. If, however, the armed forces do not get the medical personnel that they require the civilian population might be compelled to yield physicians who are doing their utmost to maintain civilian health.

MEDICAL OFFICERS NEEDED

To fill appointments for rotating internship and for psychiatric residents in St. Elizabeth's Hospital, federal institution for the treatment of mental disorders in Washington, D. C., the Civil Service Commission will accept applications for Junior Medical Officers until the needs have been met. The positions pay $2,000 a year.

The rotating internship consists of 1 year of rotating service including medicine, surgery, psychiatry, laboratory, pediatrics (affiliation), and obstetrics (affiliation). Appointments are made on July 1 and January 1 of each year. Applicants must be fourth year students in a class A medical school. A postgraduate internship of 1 year in psychiatry (psychiatric residents) is offered to graduates in medicine who have already served or are now serving in an accredited rotating internship. Proof of completion of the internship must be shown before entrance on duty. No written test is required and there are no age limits.

COURT OF APPEALS AFFIRMS CONVICTIONS

On June 15, 1942, the Court of Appeals, speaking through Associate Justice Miller and with the concurrence of Associate Justices Rutledge and Martin, affirmed the judgments convicting the American Medical Association and the Medical Society of the District of Columbia of violating the Sherman Anti-Trust Act.

While a multitude of questions were raised on the appeal, the Court saw fit to discuss only a few of the propositions of law involved.

In view of the recent decision of the Supreme Court in Apex Hosiery Company v. Leader, 310 U. S. 469, which is now generally considered as greatly limiting the field and scope of the Sherman Act, the Court of Appeals construed the charge in the indictment quite differently than it did in its first opinion. The Court said: "If a conspiracy was shown, the purpose of which was to restrain competition, raise prices or otherwise control the market, to the detriment of purchasers or consumers of medical or hospital services, by destroying or injuring Group Health Association, it was sufficient to sustain the conviction."

In order to make this rule applicable, the Court adhered to its former ruling, holding the practice of medicine was a "trade" and that the interrelated activities of the hospitals and Group Health Association in making available and financing medical services also constituted "trade" under the Sherman Act.

After this conclusion the Court proceeded to discuss whether or not the provisions of the Clayton and Norris-LaGuardia Acts covered the dispute over employment by Group Health Association of members of the profession and precluded this prosecution under the principles laid down in United States v. Hutcheson, 312 U. S. 219.

Oddly enough, while admitting that the professional or pseudoprofessional groups closely resembled or might even be doctors' or lawyers' "unions," the Court held that to apply the Acts would be to cast medical doctors in the role of laborers. The Court then drastically limited the scope of the Clayton and Norris-LaGuardia Acts and held that they included only disputes of working men, wage earners or laborers on one hand, and aggregated capital on the other.

Following out this argument, in disregard of the fact that it had already held a doctor to be in trade and a tradesman, the Court concluded that a physician is not a workman or laborer and his compensation is not wages. Hence, the Acts were not intended to cover the controversy as it exists in the present case. This drastic curtailment of the scope of the Clayton and Norris-LaGuardia Acts seems to ignore the fact that the Acts cover not only trades but any industry, craft or occupation. It is hard to conceive how a doctor can be in trade and at the same time not be in trade or in an occupation.

Next, while admitting that the Court had held in its former opinion that "any justification for the restraint, so as to make it reasonable as a regulation of professional practice . . . . must be shown in evidence as a defense," the Court brushed that ruling aside with the statement that any regulatory acts on the part of physicians, in the absence of an express delegation of power from the legislature, which injured others, amounted to restraints upon competition. In this aspect of the opinion, the Court made it plain that the activities of other professions, such as the practice of law, are subject to prosecution under the Sherman Act, if the rules and regulations of the legal or other professions "impose unreasonable restraints."

While the Court in its first opinion seemed of the opinion that the illegality of the activities of Group Health Association was relevant to the issues involved and might be a defense to the charge of restraint, because the Court discussed the merits of the contention at length in that opinion, it now concludes that even

illegal activities are entitled to the protection of the Sherman Anti-Trust Act, the theory of the Court being that if people combined to prevent the commission of a criminal activity, which is "trade" under the Sherman Act, they may be indicted and convicted for a violation of that Act. The Court argued that the prevention of illegal activities is "extra-legal" and belongs to the legislature and not to the citizen.

In upholding the admission in evidence of activities of the American Medical Association throughout the United States antedating the conspiracy period described in the indictment, even against the Medical Society of the District of Columbia, the Court said such "evidence was admissible as bearing on the intent of the Association in respect of the actions which are the subject matter of the indictment," and that it made no difference that the activities were legal when and where performed.

Lastly, the Court discussed the anomalous verdict of the jury convicting two inanimate corporations of a conspiracy, which is essentially a crime of intent, without the intervention of any human agents. It is difficult to conceive how a corporation can enter into a contract of conspiracy involving a "specific criminal intent" without acting through human agents. The problem, however, presented no difficulty to the Court which stated that "the fact that a corporation can act only by human agents is immaterial" and "the conviction of appellants does not depend upon the guilt . . . . of their agents."

In a blanket statement, the Court concluded its rather startling opinion with the sweeping ruling that all other contentions raised by appellants were "without merit" and affirmed the verdict of conviction.

In the next thirty days the American Medical Association and the Medical Society of the District of Columbia will file a Petition for a Writ of Certiorari with the Supreme Court of the United States, seeking a review of the decision and judgment of the Court of Appeals.

(Signed) Warren E. Magee

From Medical Annals of the District of Columbia 11:272-273 (July) 1942.

DISTRICT MEETINGS CANCELED

The four district medical meetings scheduled to be held in Tallahassee, Ocala, Sarasota and Miami during October have been canceled.

The Council recommended this cancellation to the Board of Governors, and the recommendation was approved by that Board. The councilors and the members of the Board of Governors feel that it would be unwise to hold the district medical meetings this year, since so many physicians are in military service, or are planning to enter service. Furthermore, doctors who are not in actual military service are carrying a double burden. Transportation is another problem; also there is a general feeling of uncertainty which would make it difficult to concentrate on a scientific medical program under present conditions.

MEDICAL LICENSES GRANTED

Dr. W. M. Rowlett, secretary of the State Board of Medical Examiners, reports that 81 of 87 applicants passed the State Board examination held in Jacksonville on June 22 and 23. Licenses have been issued to the following physicians:

Atkinson, Horace D., Orlando (Emory, 1942)
Averill, Roy S., Jacksonville (Western Reserve, 1940)
Avery, Edw. S., Winston-Salem, (U. of Pa., 1928)
Bernstein, Clarence, Winter Park (Johns Hopkins, 1931)
Branca, Henry E., Miami (N. Y. Med. Coll., 1941)
Brown, DeWitt C., Jacksonville (L. I. Coll. 1933)
Carroll, Charles H., Miami Beach (Yale, 1912)
Cato, Turner E., Miami (U. of Tenn., 1928)
Cline, Abe, Pensacola (Indiana U., 1921)
Coleman, Ralph R., Charleston (S. C. Med., 1941)
Coleman, Hubert W., Jacksonville (U. of Ga., 1940)
Collins, Grover C., Gainesville (U. of Tenn., 1941)
Cowan, Zachary S., Atlanta (Emory, 1917)
Douglas, Russell V., Weirsdale (Emory, 1942)
Enzor, Allen A., Crestview (Tulane, 1941)
Farley, Harriet G., Bushnell (Rush, 1940)
Feinberg, Edgar L., Tampa (Tulane, 1942)
Ferrell, John P., St. Petersburg (Emory, 1942)
Foraman, Forrest H., Miami (U. of Iowa, 1942)
Futch, William D., St. Petersburg (Tulane, 1942)
Gibson, I. M., Emory Univ., Ga. (Chicago U. 1941)
Grable, Theodore J., St. Petersburg (Tulane, 1942)
Hawley, Chapin, Cincinnati (U. of Va., 1942)
Hoare, Francis C., Boston (U. of Va., 1942)
Hodnette, Frank B., Atmore, Ala. (Tulane, 1942)
Horton, Samuel H., Miami (U. of Tenn., 1941)
Hudson, Otho C., Miami (U. of Louisville, 1926)
Jorgenson, Harvey L., Marinette, Wis. (Minn., 1930)
Karaphillis, John T., Tarpon Springs (Tulane, 1942)
Keller, Theodore C., Jacksonville (Tulane, 1942)
Kenney, William E., Brighton, Mass. (Yale, 1941)
Kerr, George R., Orlando (U. of W. Ont., 1936)
Kiesewetter, W. B., Chalfont, Pa. (U. of Pa., 1942)
Kleinman, Bernard S., Chicago (U. of Ill., 1926)
Knight, Lanar L., Gainesville (Temple, 1941)
Lanier, James C., Jacksonville (Vanderbilt, 1942)
Lawwill, Stewart, Chattanooga (Vanderbilt, 1915)
Leitner, Elmer E., Jacksonville (Med. Evang., 1942)
Long, Martin H., Jr., Jacksonville (U. of Pa., 1942)
Loud, Norman W., Bangor, Me. (Harvard, 1919)
McBrayer, William T., Atlanta (Emory, 1942)
McCarthy, Eugene G., Mayport (L. I. Coll., 1933)
McMillan, Eugene C., Jr., Macon, Ga. (Emory, 1942)
Mason, William G., Tampa (Tulane, 1941)
Mills, Clarence W., Jr., Atlanta (Emory, 1942)
Mims, Leon H., Jr., Miami (Duke, 1941)
Moore, Herman K., Macon, Ga. (U. of Ga., 1941)
Morse, Cornelia D., Auburn, N. Y. (Cornell, 1938)
Nadeau, Natalie A., Chicago (Loyola, 1929)
Newitt, Arthur W., Jacksonville (Detroit Med., 1917)
Nichols, William G., Orlando (Tulane, 1942)
Nickau, Robert H., Jacksonville (Duke, 1939)
Nixon, Waldense, Orlando (Meharry, 1942)
Owens, Paul L., Orlando (Northwestern, 1925)
Page, William G., West Palm Beach (Jefferson, 1939)

Pendley, Walter O., Rome, Ga. (Emory, 1942)
Pettit, Paul H., Miami (Jefferson, 1941)
Pilkington, Joseph W., St. Petersburg (Emory, 1942)
Pyle, Frank J., Orlando (U. of Pittsburgh, 1931)
Robertson, J. G., Atlanta, Ga. (Emory, 1942)
Roush, F. W., Jr., St. Petersburg (Cincin. U., 1941)
Runk, Charles S., Somerset, O. (Eclectic Med., 1919)
Schell, Warren W., Jr., Jacksonville (Meharry, 1941)
Schlesinger, Jacob, Hammond, Ind. (Chicago, 1914)
Schwalb, Otto W., Ft. Lauderdale (U. of Ga., 1928)
Scott, Joseph W., Live Oak (U. of Md., 1942)
Shelley, Joseph A., Palatka (Temple, 1942)
Smith, Lynwood B., Tampa (Johns Hopkins, 1942)
Smith, Sidney, Orlando (Rush, 1941)
Stephens, John A., Atlanta (Geo. Wash. U., 1942)
Thompson, J. Q. U., Jacksonville (Harvard, 1942)
Truebger, Harold M., Ft. Myers (Vanderbilt, 1942)
Vinson, Clifford E., Miami (Coll. Med. Evang., 1941)
Wall, Walton B., Jr., Jacksonville (Wash. U., 1940)
Weary, Willard B., Flushing, N. Y. (Chicago U., 1938)
Williams, George, Jr., Miami (Harvard, 1941)
Wisdom, David, Chipley, Ga. (Emory, 1942)
Wood, Jonathan H., Jacksonville (Emory, 1942)
Wood, Rowland E., St. Petersburg (Jefferson, 1940)
Zellner, Robert E., Orlando (Rush, 1940)
Zilinski, Stella B., Tampa (Womans Med., 1936)

BIRTHS AND DEATHS

BIRTHS

Dr. and Mrs. John P. Turk, Jr., of Miami, announce the birth of a son, John P. III, on June 27.

DEATHS

Dr. Robert L. Cline of Lakeland died on July 7, 1942.

STATE NEWS ITEMS

Dr. M. A. Collier of Wauchula is taking special work in gynecology at the Mayo Clinic in Rochester, Minn.

Dr. W. T. Simpson of Winter Haven visited a number of clinics in New York City during the month of July.

Members of the Florida Medical Association who attended the meeting of the Association for the Study of Internal Secretions, held in Atlantic City, June 8 and 9, were: Dr. Carlos P. Lamar, Miami, and Dr. James R. Cogan, Miami Beach.

Dr. S. G. Hollingsworth of Bradenton was guest speaker at the Bradenton Optimist Club on July 1.

Dr. C. H. Wilson of Bartow took a short postgraduate course in general practice at Johns Hopkins Hospital in Baltimore during the month of August.

Dr. Amelia B. Sheftall announces the removal of her offices from Gainesville to 1818 Hendricks Avenue, Jacksonville. She will limit her practice to pediatrics.

The Florida doctors who attended the postgraduate clinic at Emory University, Atlanta, in June were: R. L. Hughes, Bartow; L. L. Whiddon, Ft. Pierce; R. L. Miller, Graceville; R. L. Cline, G. C. Overstreet, W. L. Tillis, Lakeland; A. L. Rowe, Lake Worth; M. B. O'Kelley, Leesburg; Walter C. Jones, Miami; E. V. Anderson, A. R. Haisfield, H. B. Haisfield, Pensacola; J. E. Harris, A. L. Matthews, A. O. Morton, Sarasota; Edgar W. Stephens, West Palm Beach, and B. J. Bond, Winter Haven.

ROBERT LAURINE CLINE

Dr. Robert L. Cline, prominent Lakeland physician and civic worker, died on July 7, at the age of 70.

A native of Harris County, Georgia, Dr. Cline spent his boyhood there and later attended Emory University, then Oxford, and the University of Georgia Medical School. He did graduate work at Tulane University, New Orleans, and at Bellevue Hospital, New York City, and also attended the Eye, Ear, Nose and Throat Hospital in New Orleans.

He began the practice of his profession in north Florida, and after one year, moved to Arcadia, where he remained until he came to Lakeland in 1921.

Widely known throughout Florida, not only because of his professional skill but also because of his friendly disposition, Dr. Cline had a large practice as an eye, ear, nose and throat specialist, but he managed to find time for numerous civic enterprises.

He was an ardent lover of nature and had spent considerable time during the past year urging Lakelanders to set out oak trees in order to help beautify the city. As a result, hundreds of oaks were planted.

Dr. Cline was a life member of the Florida Medical Association and a Fellow of the American Medical Association. He was a charter member and a past president of the Lakeland Kiwanis Club, a member of the Florida Southern College board of trustees and the College Heights Methodist Church board of stewards. He was also a

member of the original building committee of College Heights.

Dr. and Mrs. Cline, who was Miss Nilwon Nowlin of Martin, Tenn., were married on Oct. 5, 1910.

Besides the widow, he is survived by three sons, Robert Nowlin Cline and Thomas Cline, Lakeland, and Lieut. Wade Cline, St. Petersburg; two sisters, Mrs. A. C. Hobbs and Mrs. Ross Blanton, Columbus, Ga.; and three brothers, Dr. H. E. Cline, Haines City; C. R. Cline, Bradenton, and W. E. Cline, Hamilton, Ga.

Dr. Cline will be missed at future meetings of the Florida Medical Association. For many years past he served as delegate from the Polk County Medical Society, and took a keen interest in the affairs of the Association.

STATE OF FLORIDA
MILITARY DEPARTMENT
OFFICE OF THE ADJUTANT GENERAL
STATE ARSENAL, ST. AUGUSTINE

February 10, 1942.

GENERAL ORDERS,
NO. 2

1. Announcement is made with profound regret of the death of Brigadier General Henry Bacon, Florida National Guard Retired, which occurred at Jacksonville, Florida, February 8, 1942.

2. Brigadier General Bacon was born at St. Marys, Georgia, March 27, 1858. He entered the military service of the State April 5, 1889, when he was appointed Colonel and Surgeon General of the Florida State Troops, in which position he was reappointed and continued in service until the re-organization of the organized militia of the State as a National Guard of Florida, when he was appointed Colonel in the Medical Corps, since which time he has served continuously as the Senior Officer of the Medical Department and as acting Surgeon General. Appointed Brigadier General on the retired list January 27, 1915, in consideration of his having served nearly twenty-five years in the grade of Colonel.

3. Funeral services were held at Jacksonville, Florida, at 2:00 o'clock P. M., February 9, 1942. Interment was in St. Marys Cemetery at St. Marys, Georgia.

4. In the death of Brigadier General Bacon the National Guard of the State of Florida has lost a friend and staunch supporter, and the State of Florida a distinguished citizen and able soldier.

5. As a mark of respect the flag at the State Arsenal and all armories throughout the State was displayed at half staff on the day of the funeral.

BY COMMAND OF THE GOVERNOR:

VIVIAN COLLINS,
The Adjutant General.

OFFICIAL:

J. B. ROUSSEAU,
Major, Retired,
Assistant.

COMPONENT COUNTY SOCIETIES

ESCAMBIA

Major Walter E. Murphree and Major Joseph I. Laird, members of the medical recruiting board, Camp Blanding, were featured speakers at a special meeting of the Escambia County Medical Society held on July 1. They discussed the regulations for classifying members of the medical profession for possible service in the armed forces.

LEE

The Lee County Medical Society stands 100 per cent paid for 1942. This society is headed by Dr. Harvie J. Stipe of Ft. Myers, president; Dr. H. Quillian Jones, Ft. Myers, vice president; and Dr. A. Louis Girardin, Ft. Myers, secretary-treasurer.

LEON-GADSDEN-LIBERTY-WAKULLA-JEFFERSON

The quarterly meeting of this society was held Thursday, July 16, at Wakulla Springs Lodge. The meeting was of unusual interest and well attended. On the scientific program guest speakers appeared from Thomasville, Ga., and Jacksonville. The program was as follows:

"Influenzal Meningitis, a Recovery, with a Review of Some of the Literature," Helen Bellhouse, M. D., Thomasville, Ga.

"Some General Remarks About Ear Infections," George W. Brown, Jr., M. D., Tallahassee.

"Reactions to Sulfathiazole with Case Reports," L. L. Dozier, M. D., Tallahassee.

"Hypertension," Webster Merritt, M. D., Jacksonville.

Discussion opened by B. A. Wilkinson, M. D., Tallahassee.

PINELLAS

The Pinellas County Medical Society held a dinner meeting at Clearwater Beach on July 3. Drs. P. H. Guinand and H. E. Winchester presented a paper on "Enterolithiasis; Case Report."

The Society's second meeting, scheduled for July 15, at the beach home of Dr. L. M. Gable, was cancelled inasmuch as Dr. Gable had gone into service. There will be no meeting of the Society in August.

BUREAU OF PROFESSIONAL RELATIONS

University of Florida—School of Pharmacy

GASTRIC ANTACIDS

MAGNESIUM TRISILICATE

Antacids are employed primarily to reduce or neutralize the acidity of the gastric secretion, preferably by local action rather than through systemic alkalinizing effects. It is known that gastric acidity is largely caused by an excess of free hydrochloric acid, although other fermentative acids may contribute to its production.

Available to the physician is a group of accepted drugs and chemicals, those gastric antacids in common use being the basic phosphates, bismuth compounds, aluminum compounds, the bicarbonates, magnesium or calcium salts. The physician, in designing an antacid prescription, can proportion such ingredients to suit the specific and individual needs of the patient.

Magnesium trisilicate is not actually a gastric antacid, but instead is classed as an adsorbent. In the presence of acid, magnesium trisilicate acquires a gelatinous consistency, probably the formation of silicious acid which is a neutral colloidal gel. If any of the gelatinous mass lodges in the crater of an ulcer it will progressively neutralize the acid which diffuses through it. Trisilicate arrested in a crater should establish a local pepsin-free zone since its adsorptive power is sustained. In the opinion of Mutch,[1, 2] magnesium trisilicate has adsorptive power superior to any other medicaments in common use as adsorbents. His reports indicate that the immediate adsorptive action is great, and that this activity continues through the gastrointestinal tract. Trisilicate exhibits an antacid power which is sustained even in the presence of excess acid, thus facilitating a continuous control of hyperchlorhydria in the gastric contents as a whole. Neither constipation nor diarrhea has been reported as a result of the use of magnesium trisilicate. According to Mutch, alkalosis, pyloric obstruction, interference with digestion or secondary rises in acid secretion followed by gastritis are rarely observed.

Other adsorbents commonly employed include kaolin and colloidal aluminum hydroxide. Goldstein[3] reported satisfactory results with a combination of magnesium trisilicate, aluminum hydroxide and kaolin.

REFERENCES

1. Mutch, N.: Synthetic Magnesium Trisilicate; Its Action in Alimentary Tract, Brit. M. J. 1: 205-208 (Feb. 1) 1936.
2. Mutch, N.: Silicates of Magnesium, Brit M. J. 1: 143-148 (Jan. 25) 1936.
3. Goldstein, H. I.: Med. Rec. 148: 417, 1938.

ABSTRACT DEPARTMENT

Members of the Florida Medical Association who have had articles published in out-of-state medical journals are requested to forward such journals or reprints to Box 1018, Jacksonville, for abstracting in this department.

PNEUMOPERITONEUM IN THE TREATMENT OF PULMONARY TUBERCULOSIS, FOWLER, W. O., ORLANDO, AM. REV. TUBERC. **44**: 474-478 (OCT.) 1941.

In the opinion of the author, therapeutic pneumoperitoneum in the treatment of tuberculosis is indicated in:

1. Far advanced cases when no other procedure is applicable.
2. Bilateral tuberculosis with adhesive pleuritis which prevent use of pneumothorax.
3. Unilateral tuberculosis with adhesive pleuritis, too acute for thoracoplasty.
4. Predominantly basal lesions. Here pneumothorax is still the method of choice but the author feels that pneumoperitoneum affords a direct means of attack with low incidence of complications.
5. Selected cases to enhance the effect of phrenic nerve block.
6. Uncontrollable hemorrhage, especially when pleural adhesions are present.

Fifty-six patients out of 1,200 admissions to the State Tuberculosis Sanatorium were given pneumoperitoneum. Of these, 25 per cent later died, 19 per cent are unimproved, and in 54 per cent the condition is arrested or improved.

THE SIGNIFICANCE OF TARGET CELLS IN ANEMIA, BOHROD, MILTON G., MIAMI BEACH, AM. J. M. SC. **202**:869-874 (DEC.) 1941.

The author reviews the literature and directs attention to the fact that the appearance of target cells in anemia, rather than being unusual, is very common. He states that "rarely are they present for as much as a week, while in the majority of cases they are seen for four or five days. They usually first appear on the third or fourth day following a hemorrhage." He points to the coincidence of a transitory decreased fra-

gility of the erythrocytes with the appearance of target cells, and cites a case in point.

Based on one assumption, namely that the cell does not change its shape in vivo, the author offers a convincing explanation of the appearance of target cells in anemia. He states that "this assumption is not as startling as may at first sight appear." He reaches the following conclusions:

1. Target cells are commonly seen in the regeneration of blood, regardless of the cause of the blood loss.
2. In acute anemias they are present for only a short time early in the regenerative phase, and they have disappeared by the time a significant rise of erythrocyte count is evident. In chronic anemias they may be present over long periods of time.
3. The question of normal shape of the circulating erythrocyte should be re-examined. It is possible, but not yet proven, that the target cell preserves the bowl shape of the intravascular cell in modified form and resists deforming influences which are responsible for producing the biconcave disc seen in blood outside the body.
4. The target cell is a hyperresistant cell produced by the bone marrow in response to the blood loss. Increased resistance to the hemolytic action of hypotonic saline and to acetic acid has been demonstrated.
5. The contention that the target cell represents the fundamental defect in Cooley's anemia seems to be unjustified. It is simpler, in the light of available evidence, to regard the target cell in this disease, as in sickle-cell anemia and many other anemias, as a response to the blood destruction rather than the cause of it.

An excellent bas-relief photomicrograph showing target cells accompanies the article.

BOOKS RECEIVED

Acknowledgment of books received will be made in this column and this will be deemed by us a full compensation to those sending them. A selection will be made for review as expedient.

THE DOCTOR AND THE DIFFICULT CHILD. By William Moodie, M. D., F. R. C. P., D. P. M., Medical Director, London Child Guidance Clinic and Training Center, London. Cloth. Price, $1.50. Pp. 214. New York: The Commonwealth Fund; London: Oxford University Press, 1940.

IT IS YOUR LIFE. KEEP HEALTHY; STAY YOUNG; LIVE LONG. By Max M. Rosenberg, M. D. Cloth. Price, $2.50. Pp. 450, with 14 illustrations. New York: The Scholastic Book Press, 1940.

MEDICAL NURSING. By Edgar Hull, M. D., F. A. C. P., Clinical Professor of Medicine, Louisiana State University School of Medicine, New Orleans; Christine Wright, R. N., B. S., Instructor of Nursing Arts, Charity Hospital School of Nursing, New Orleans, 1928-1939, and Ann B. Eyl, B. S., Assistant Dietitian, Cook County School of Nursing, Chicago. Fabrikoid. Price, $3.50. Pp. 588, with 168 illustrations. Philadelphia: F. A. Davis Company, 1940.

A PRIMER ON THE PREVENTION OF DEFORMITY IN CHILDHOOD. By R. Beverly Raney, B. A., M. D., Associate in Orthopaedic Surgery, Duke University School of Medicine, Durham, N. C., in collaboration with Alfred Rives Shands, Jr., B. A., M. D., Medical Director, Alfred I. duPont Institute of the Nemours Foundation, Wilmington, Del. Cloth. Price, $1. Pp. 188, with 88 illustrations. Elyria, Ohio: National Society for Crippled Children, Inc., 1941.

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FRACTURES & TRAUMATIC SURGERY—Two Weeks Intensive Course will be offered starting September 21st. Informal Course available every week.

GYNECOLOGY—Two Weeks Intensive Course will be offered starting October 5th. Clinical and Diagnostic Courses every week.

OBSTETRICS—Two Weeks Intensive Course will be offered starting September 21st. Informal Course every week.

OTOLARYNGOLOGY—Two Weeks Intensive Course will be offered starting September 14th. Clinical and Special Courses every week.

OPHTHALMOLOGY—Two Weeks Intensive Course will be offered starting September 28th. Five Weeks Course in Refraction Methods starting October 19th. Informal Course every week.

ROENTGENOLOGY—Courses in X-Ray Interpretation, Fluoroscopy, Deep X-Ray Therapy every week.

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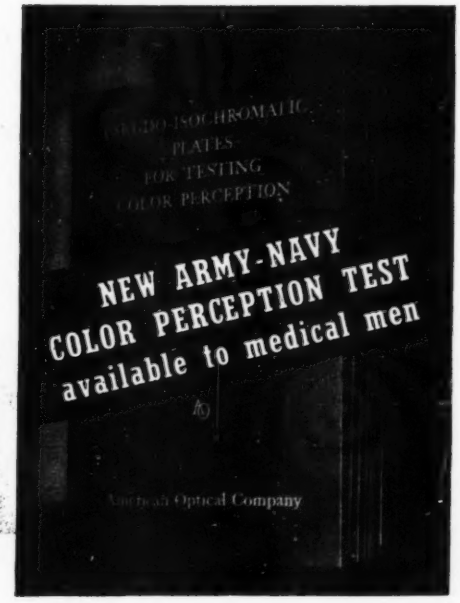

An "American Edition" of a color perception test, combining the best charts of the Ishihara and Stillings collections, and approved by the Surgeon General for use by the U. S. Army and Navy, is made available to the medical profession exclusively by American Optical Company. Production of this new volume of forty-six charts came after months of research which began when it became virtually impossible to obtain reliable color tests from recognized foreign sources.

One of the outstanding advantages of this book is its simplicity. Another is the speed with which it reveals the seriousness of a color weakness. Plates are so arranged that malingerers are easily detected. Bound in blue cloth with gold lettering, the American Color Perception Test will form a creditable addition to your equipment. Order from the nearest AO Branch. Price $10.00.

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OFFICE ENDOCRINOLOGY. By Robert B. Greenblatt, B. A., M. D., C. M., Professor of Experimental Medicine, University of Georgia School of Medicine, Augusta. This booklet is in answer to the suggestion of postgraduate class students. Paper. Pp. 106, with 8 illustrations. Augusta, Ga.: Walton Printing Company, 1941.

NEPHRITIS. By Leopold Lichtwitz, M. D., Chief of the Medical Division of Montefiore Hospital, Clinical Professor of Medicine, Columbia University, New York. Dr. Lichtwitz's treatise on nephritis is the result of a lifelong study of renal pathology at the bedside and in the laboratory. Cloth, Price, $5.50. Pp. 344, with 120 illustrations and tables. New York: Grune and Stratton, 1942.

THE MODERN ATTACK ON TUBERCULOSIS. By Henry D. Chadwick, M. D., Commissioner of Public Health of the Commonwealth of Massachusetts, 1933-1938, Medical Director of Middlesex Tuberculosis Sanatorium, 1938-1941; and Alton S. Pope, M. D., Deputy Commissioner of Public Health and Director of the Division of Tuberculosis, Commonwealth of Massachusetts, Boston. This handbook makes no pretense of adding to the sum of our knowledge of tuberculosis. The attempt has here been made to provide a concise digest of the experience of many workers and of present-day practices, in a form serviceable to the health officer and administrator. Cloth. Price, $1.00. Pp. 95. New York: The Commonwealth Fund, 1942.

ENCEPHALITIS: A CLINICAL STUDY. By Josephine B. Neal, A. B., M. D., Sc. D., F. A. C. P., Associate Director, Bureau of Laboratories, Department of Health, New York, Clinical Professor of Neurology, College of Physicians and Surgeons, Columbia University, New York. Cloth. Pp. 563, with illustrations. New York: Grune and Stratton, Inc., 1942.

ESSENTIALS OF DERMATOLOGY. By Norman Tobias, M. D., Senior Instructor in Dermatology, St. Louis University, St. Louis. Fabrikoid. Price, $4.75. Pp. 497, with illustrations. Philadelphia, London, Montreal: J. B. Lippincott Company, 1941.

ADVERTISERS' NOTES

SUMMER DIARRHEA IN BABIES

Casec (calcium caseinate), which is almost wholly a combination of protein and calcium, offers a quickly effective method of treating all types of diarrhea, both in bottle-fed and breast-fed infants. For the former, the carbohydrate is temporarily omitted from the 24-hour formula and replaced with 8 level tablespoonfuls of Casec. Within a day or two the diarrhea will usually be arrested, and carbohydrate in the form of Dextri-Maltose may safely be added to the formula and the Casec gradually eliminated. Three to six teaspoonfuls of a thin paste of Casec and water, given before each nursing, is well indicated for loose stools in breast-fed babies.

Please send for samples to Mead Johnson & Company, Evansville, Indiana.

POLAROID AXIS ALIGNMENT DEVICE

In connection with the increased demand for Polaroid prescription glasses, American Optical points out that shops handling such prescriptions should be equipped with the M623 Polaroid Axis Aligning Device, an instrument that is absolutely necessary for the accurate alignment of the axes of Polaroid lenses.

This Polaroid Axis Aligning Device should be used when marking the axis of polarization before and after the lenses are mounted. It can also be used to check Polaroid Fits-On glasses after they have been attached to the frame.

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THE BULLETIN

The Bulletin of the Woman's Auxiliary is the official publication of the organization.

Its purposes are:

1. To keep the 27,000 auxiliary members informed of the plans and policies of the national organization as well as those of the parent organization, the American Medical Association, in order that the auxiliary may function as a united, constructive and effective helpmate.

2. To announce the programs and instructions of all standing committees, thereby eliminating the leaflets, form letters, etc., used in previous years. This policy, introduced this year, makes it compulsory that all county officers and chairmen have access to the Bulletin.

3. To disseminate news from all national officers of the Auxiliary and the American Medical Association relative to the outstanding topics and projects of the day. For example, this year will bring communications pertaining to home defense measures, national nutritional education, and Pan-American unity.

4. To strengthen the ties of interest and understanding by greater participation of all members in the activities of the organization as a whole.

5. To keep all members informed of the principles and ideals of the organization in order that they, in turn, may disseminate them to eligible non-members.

It is issued quarterly, there being the fall, winter, convention, post-convention numbers. Price, $1.00 per year.

INSTRUCTIONS FOR COUNTY CHAIRMEN OF BULLETIN CIRCULATION

1. Read the Bulletin thoroughly in order to become familiar with what you are attempting to promote.

2. Contact each member of your unit, informing her as to what the Bulletin is, its value to the individual member, and its indispensability to officers. Then extend to her the privilege of subscribing or refusing. Please report to the State Chairman by November 15 and May 1 the number of such contacts you have made. If your unit is too large for you to cover alone, request your president to appoint a committee to assist you.

3. Purchase a receipt book which becomes the permanent equipment of the unit. Give each subscriber a receipt. Retain all stubs.

4. Keep a record of all subscriptions. This should contain: (1) name of subscriber; (2) address; (3) date paid; (4) beginning issue; (5) expiration date. Please send a duplicate of this information to your State Bulletin Chairman.

5. Send remittances, names, addresses, and issue subscription is to begin with, to the National Bulletin Chairman, Mrs. Charles H. Werner, 2633 Jules Street, St. Joseph, Missouri.

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STATE AND SECTIONAL MEETINGS

SOCIETY	PRESIDENT	SECRETARY	ANNUAL MEETING
Florida Medical Association	Gilbert S. Osincup, Orlando	Shaler Richardson, Jacksonville	St. Petersburg, Apr. 12-14, 1943
Florida Medical Districts:			
A—Northwest	Courtland D. Whitaker, Marianna	Stewart Thompson, Jacksonville	Tallahassee, Postponed
B—Northeast	L. Y. Dyrenforth, Jacksonville	" " "	Ocala, Postponed
C—Southwest	Edgar Watson, Lakeland	" " "	Sarasota, Postponed
D—Southeast	Lloyd J. Netto, W. Palm Beach	" " "	Miami, Postponed
Alabama Medical Association	H. B. Searcy, Tuscaloosa	D. L. Cannon, Montgomery	Birmingham, Apr. 20-22, 1943
Georgia, Medical Assn. of	James A. Redfearn, Albany	E. D. Shanks, Atlanta	Atlanta, May 11-14, 1943
Florida—			
Section, Am. College Phys.	R. H. Knowlton, St. Petersburg	Kenneth Phillips, Miami	St. Petersburg, Apr. 11-12, 1943
Dental Society, State	I. W. Shields, Miami	W. P. Wood, Jr., Tampa	Tampa, Nov. 9-11, 1942
Derm. and Syph., Soc. of	Wiley M. Sams, Miami	Lauren M. Sompayrac, Jacksonville	St. Petersburg, Apr. 11-12, 1943
East Coast Medical Association	T. C. Kenaston, Cocoa	I. M. Hay, Melbourne	Melbourne, 1942
Hospital Association	Mr. Ernest G. McKay, Tampa	Mr. R. L. Martin, St. Petersburg	Tampa—Postponed
Industrial Surgeons, Assn. of	Frank D. Gray, Orlando	Richard H. Walker, Orlando	St. Petersburg, Apr. 11-12, 1943
Medical Postgraduate Course	Turner Z. Cason, Jacksonville	Chairman	
Nurses Association, State	Mrs. M. Stetson, St. Petersburg	Mrs. Phyllis Leonard, St. Augustine	Orlando, November, 1942
Ophthal. & Otol., Soc. of	Shaler Richardson, Jacksonville	C. E. Dunaway, Miami	St. Petersburg, Apr. 11-12, 1943
Pathological Society	L. Y. Dyrenforth, Jacksonville	Iva C. Youmans, Miami	St. Petersburg, Apr. 11-12, 1943
Pediatric Society	Ludo von Meysenbug, Daytona B.	Robert Blessing, Ft. Lauderdale	St. Petersburg, Apr. 11-12, 1943
Pharmaceutical Association, State	Mr. Emmett L. Brown, Palatka	Mr. R. Q. Richards, Ft. Myers	
Public Health Association	W. H. Pickett, Jacksonville	Lloyd N. Harlow, Jacksonville	Miami, Fall, 1942
Radiological Society	John N. Moore, Ocala	Walter A. Weed, Orlando	St. Petersburg, Apr. 11-12, 1943
Railway Surgeons' Association	Frank D. Gray, Orlando	W. C. Page, Cocoa	St. Petersburg, Apr. 11-12, 1943
Tuberculosis & Health Assn.	Mr. E. M. Newald, Orlando	Mrs. C. R. Whitaker, Eustis	
Chattahoochee Valley Med. Assn.	Herbert E. White, St. Augustine	Robert B. McIver, Jacksonville	Postponed
Gulf Coast Clinical Society	G. G. Oswalt, Mobile, Ala.	C. L. Rutherford, Mobile, Ala.	Mobile, 1942
S.E. Sec., Am. Cong. Phys. Ther.	John J. McGuire, Pensacola	Kenneth Phillips, Miami	
Southeastern Surgical Congress	Alton Ochsner, New Orleans	B. T. Beasley, Atlanta	Louisville, Mar. 8-10, 1943
Southern Medical Association	M. Pinson Neal, Columbia, Mo.	Mr. C. P. Loranz, Birmingham	Richmond, November 10-12, 1942
Suwannee River Medical Society	L. J. Arnold, Jr., Lake City	T. H. Bates, Lake City	Lake City, Dec. 1942

COMPONENT SOCIETIES BY DISTRICTS

	SOCIETY	PRESIDENT	SECRETARY	MEETING DATE	MEMBERS Total	MEMBERS Paid	COUNCILOR
A	Bay	M. F. Parker, M.D. Panama City	J. O. Barfield, M.D. County Health Unit Panama City		10	9	
	Escambia *Santa Rosa	A. L. Stebbins, M.D. State Bd. of Health Pensacola	William S. Randall, M.D. 1419 E. Cervantes St. Pensacola	2nd Tuesday 8:00 P.M.	52	51	A-1-43 C. D. Whitaker, M.D. Marianna
	Franklin-Gulf	Thos. Meriwether, M.D. Wewahitchka	J. R. Norton, M.D. Port St. Joe	3rd Tuesday Odd Months	5	4	
	Jackson *Calhoun	W. R. Wandeck, M.D. Marianna	R. N. Joyner, M.D. Marianna	2nd Tuesday 7:30 P.M.	12	100%	
	Walton-Okaloosa	A. G. Williams, M.D. Lakewood	R. B. Spires, M.D. DeFuniak Springs	3rd Thursday 8:00 P.M.	6	100%	
	Washington-Holmes	N. J. Dawkins, M.D. Vernon	B. W. Dalton, M.D. Vernon		6	100%	
B	Columbia *Baker, Hamilton	Harry S. Howell, M.D. Blanche Hotel Annex Lake City	Thomas H. Bates, M.D. Blanche Hotel Annex Lake City	1st Monday 7:30 P.M.	11	100%	A-2-44 William D. Rogers, M.D. Chattahoochee
	Leon-Gadsden-Liberty-Wakulla-Jefferson	G. H. Garmany, M.D. Tallahassee	B. A. Wilkinson, M.D. Telephone Bldg. Tallahassee	Quarterly 3:00 P.M.	41	37	
	Madison-Suwannee	Eustace Long, M.D. Madison	E. D. Thorpe, M.D. Madison		8	100%	
	Taylor *Dixie, Lafayette	J. C. Ellis, M.D. Perry	Chas.A. O'Quinn, M.D. Perry	Last Friday 8:00 P.M.	5	100%	
B	Alachua *Bradford, Gilchrist, Union	R. E. Summitt, M.D. 122 No. Pleasant St. Gainesville	Chester F. Ahmann, M.D. 1043 W. Masonic Gainesville	2nd Wednesday 7:30 P.M.	29	21	B-3-43 L. Y. Dyrenforth, M.D. Jacksonville
	Duval *Clay, Nassau	Ernest B. Milam, M.D. 508 Greenleaf Bldg. Jacksonville	Frank G. Slaughter, M.D. 2033 Riverside Ave. Jacksonville	1st Tuesday 8:15 P.M.	192	100%	
	Marion *Levy	B. S. Stutts, M.D. Anderson Bldg. Dunnellon	T. Hartley Davis, M.D. 202 Commercial Bank Ocala	3rd Thursday 12:30 P.M.	29	28	
	Putnam	J. Worth Brantley, M.D. Grandin	C. M. Knight, M.D. Palatka	2nd Tuesday Even Months 7:00 P.M.	10	9	
	St. Johns	W. D. Webb, M.D. 220 St. George St. St. Augustine	Charles C. Grace, M.D. East Coast Hospital St. Augustine	3rd Tuesday 8:30 P.M.	12	100%	
	Brevard	G. T. von Colditz, M.D. Route 1 Cocoa	I. K. Hicks, M.D. Melbourne	3rd Wednesday	11	10	B-4-44 Meredith Mallory, M.D. Orlando
	Lake *Sumter	Louis R. Bowen, M.D. Box 905 Eustis	R. H. Williams, M.D. State Theater Bldg. Eustis	1st Thursday 12:30 P.M.	20	16	
	Orange *Osceola	Spencer A. Folsom, M.D. 319 Exchange Bldg. Orlando	E. E. Hitchcock, M.D. 740 N. Magnolia Orlando	3rd Wednesday 8:30 P.M.	88	80	
	Seminole	C. L. Park, M.D. 515 1st Nat. Bank Bldg. Sanford	O. L. Barks, M.D. Sanford Clinic Sanford	2nd Monday 7:00 P.M.	13	100%	
	Volusia *Flagler	W. C. Pay, M.D. 221 W. Rich Ave. DeLand	R. L. Miller, M.D. 258½ S. Beach St. Daytona Beach	2nd Tuesday 7:30 P.M.	46	40	
C	Hillsborough	B. W. Lowry, M.D. 1019 Citizens Bldg. Tampa	James S. Grable, M.D. 811 Citizens Bldg. Tampa	1st Tuesday 8:00 P.M.	104	96	C-5-44 Leland F. Carlton, M.D. Tampa
	Manatee	L. W. Blake, M.D. Bradenton	M. M. Harrison, M.D. Professional Bldg. Bradenton	3rd Tuesday 7:00 P.M.	14	100%	
	Pasco-Hernando-Citrus	J. T. Bradshaw, M.D. San Antonio	G. R. Creekmore, M.D. Brooksville	2nd Thursday 7:00 P.M.	13	100%	
	Pinellas	M. A. Nickle, M.D. 503 Coachman Bldg. Clearwater	O. O. Feaster, M.D. 166 Fourth Ave. N. E. St. Petersburg	1st and 3rd Fridays 6:30 P.M.	106	100%	
	Sarasota	A. Lamar Matthews, M.D. Sarasota	Stanley T. Martin, M.D. 361 Main St. Sarasota	2nd Tuesday 8:30 P.M.	19	15	
	DeSoto-Hardee-Highlands-Charlotte-Glades	L. W. Martn, M.D. Sebring	G. H. McSwain, M.D. Arcadia	2nd Tuesday 8:00 P.M.	19	18	C-6-43 Edgar Watson, M.D. Lakeland
	Lee *Collier, Hendry	Harvie J. Stipe, M.D. 312 Pythian Bldg. Fort Myers	A. Louis Girardin, M.D. 309 Pythian Bldg. Fort Myers	3rd Tuesday 7:30 P.M.	17	100%	
	Polk	J. R. Boulware, M.D. Box 367 Lakeland	Edgar Watson, M.D. Box 1021 Lakeland	2nd Wednesday 1:00 P.M.	60	55	
D	Palm Beach	James R. Sory, M.D. 616 Harvey Bldg. W. Palm Beach	D. W. Martin, M.D. 618 Comeau Bldg. W. Palm Beach	4th Monday 8:00 P.M.	68	67	D-7-43 Lloyd J. Netto, M.D. West Palm Beach
	St. Lucie-Okeechobee-Indian River-Martin	R. C. Boothe, M.D. Box 408 Ft. Pierce	Adrian M. Sample, M.D. Box 176 Ft. Pierce	3rd Thursday 8:00 P.M.	18	100%	
	Broward	Elbert McLaury, M.D. 210 Hollywood Bk. Bldg. Hollywood	O. C. Brown, M.D. 915 Sweet Bldg. Fort Lauderdale	4th Wednesday 8:00 P.M.	41	100%	D-8-44 Elbert McLaury, M.D. Hollywood
	Dade	Thomas O. Otto, M.D. 704 Huntington Bldg. Miami	Wiley M. Sams, M.D. 305 Ingraham Bldg. Miami	1st Tuesday 8:30 P.M.	346	298	
	Monroe	Harry C. Galey, M.D. 532 Fleming St. Key West	W. R. Warren, M.D. 511 Eaton St. Key West	1st Sunday 9:00 P.M.	5	100%	

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